IDG .net Beware software by subscription, warns expert. PAGE 30 New laws drive users to fill gaps in security. PAGE 56

COMPUTERWORLD

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DECIMALIZATION CONCERNS LINGER

Rise in stock trading could wallop networks

BY LUCAS MEARIAN

Months after U.S. stock markets shifted from measuring the value of stocks in fractions to pennies, fears about an explosion in trade volume that could choke data networks are beginning to subside. In most cases, data rose 12% to 25% on exchanges and within brokerage houses.

But some attendees at a Securities Industry Association conference held here last week said they're afraid that the current market downturn is creating an artificial calm before a data storm that's expected to rage once the economy rebounds.

When the New York Stock Exchange and Nasdaq Stock Market Inc. shifted to measuring the value of stocks in decimals rather than fractions earlier this year, IT managers worried that the amounts of data flowing across their networks would increase up to sixfold, since stocks would be listed in smaller increments that would change faster than fraction-based prices did, thus resulting in more trading.

During the past nine months,

Decimalization, page 14

WALLSTREETIT

BEEP! YOUR NETWORK IS TOO SLOW

Users alerted to poor provider performance

BY JAMES COPE

As companies outsource more of their network infrastructure and applications to service providers, they often trade the hassle of managing the network for managing the service-level agreements that they strike with those providers.

To address that headache, Web site performance measurement company Keynote Systems Inc. last week announced its SLA Perspective services. In what analysts say is the first service of its kind, the enterprises are able to measure the performance of outsourced networks in real time and automatically signal IT managers when performance goes below levels specified in the SLA, Keynote says.

Network, page 77

AT A GLANCE

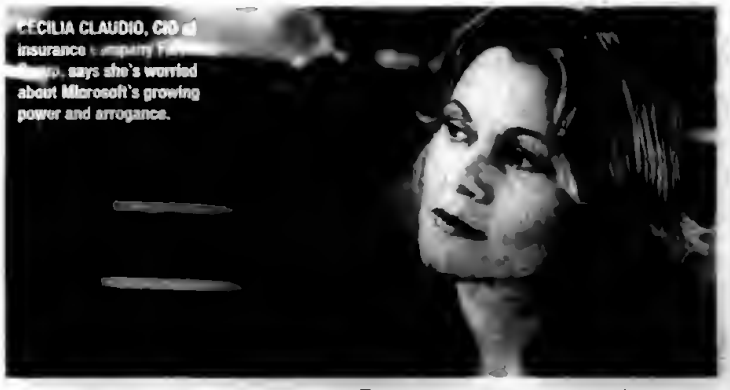
The Cost of Measurement

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CECILIA CLAUDIO, CIO of insurance company Fireman's Fund, says she's worried about Microsoft's growing power and arrogance.

Microsoft's Battle For the Enterprise

Rivals fear that Microsoft will leverage its market power to conquer the enterprise software market, especially with the U.S. antitrust case in serious trouble. After a careful analysis of six key enterprise markets, *Computerworld* concludes that Microsoft has made impressive gains in corporate America but is far from achieving the 70% to 90% market shares that spell dominance.

Special Report begins on page 16.

Six Markets Analyzed

1. Server operating systems
2. Application development
3. Database software
4. Mobile/wireless
5. E-commerce software
6. E-mail/collaboration

USERS NOT RUSHING TOWARD .NET

Windows 2000 projects may stall migrations

BY LEE COPELAND GLADWIN
ATLANTA

At last week's TechEd conference, Microsoft Corp. unveiled the final beta version of its .Net platform. But many users here said they're still too busy tackling migrations to Windows 2000 and Active Directory to take a serious look at .Net.

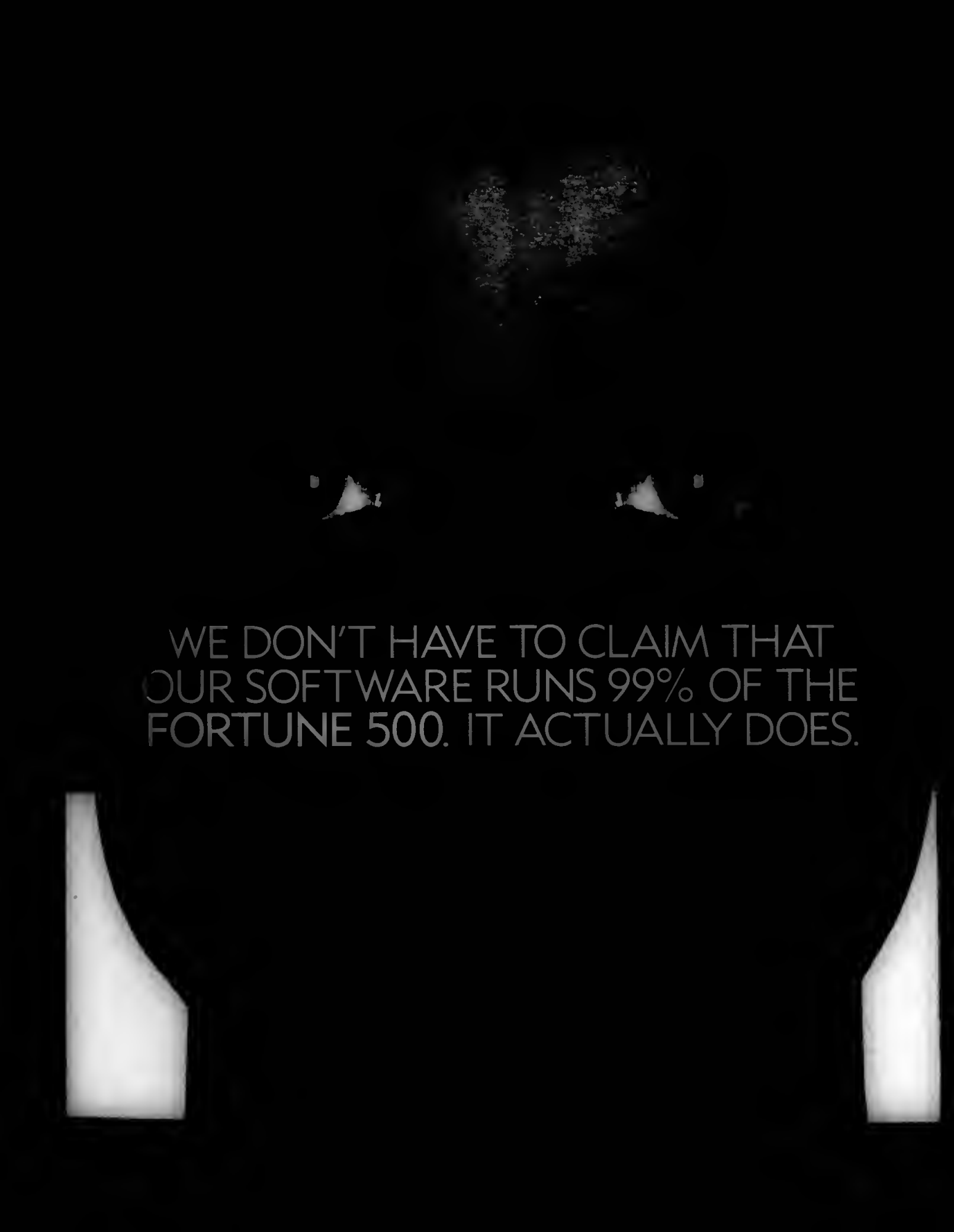
And since the .Net suite won't ship until year's end, developers voiced optimism that the remaining kinks will be addressed before they're ready to undertake the migration.

"We've got projects coming up where we could use .Net," said Vince Thornton, a senior software engineer at Standard Register Co. But the Dayton, Ohio-based printer of business forms will wait for the final code because it's still migrating to Windows 2000, Thornton added. And it wants to avoid using beta code.

"There always is a risk that something between the second beta and the release could break our code," he said.

"We wouldn't suggest companies use [.Net tools] for business-critical applications for

.Net Migration, page ??


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FONTS OF INSPIRATION

When Esurance CIO Phil Swift needs to clear his thoughts to solve a problem at work, he picks up a paintbrush and splashes colors across a canvas. What inspires you? **PAGE 44**

DROP THE GIMMICKS, PLEASE



In this week's Security Manager's Journal, vendors try plenty of sales tricks to get Vince Tuesday to pony up, but they don't listen to his real security needs. **PAGE 54**

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6 Digital sabotage from disgruntled ex-employees is a threat that grows with high-tech layoffs.

7 A glut of data center space will drive down prices for Web-hosting services this year, say analysts.

8 Oracle opens fire on the technology front in the database war with IBM and Microsoft.

10 Web-to-pager system promises to help California manage its energy crisis.

12 The Labor Department teams up with Monster.com to help out with IT hiring searches.

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35 Domain name infringement is a serious threat, warns Eric J. Sinrod. Companies should be ready to litigate if they become victims.

36 Jim Champy writes that at least three "legacy behaviors" can stop or slow down a company from building a new IT infrastructure.

36 Workstyles: At Lawrence Livermore National Laboratory, it's not enough for IT people to know just Java and C++; they have to understand advanced mathematics and science as well.

42 Hot projects not only keep employees on their toes at *Computerworld*'s Best Places to Work in IT, but they also keep staffers charged.

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51 Asta launches a new tool that it claims will help users quickly identify and respond to denial-of-service attacks.

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58 Hands On: The newest desktop LCD displays are brighter, sharper, less expensive and available in a wide range of sizes, says reviews editor Russell Kay.

60 Geospatial technologies aren't just about making data maps; they have a key role to play in the enterprise, says consultant Nancy Tosta.

62 QuickStudy: BIOS is an application that's stored in nonvolatile memory and is always the first program that executes when a computer is powered up.

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30 Dan Gillmor says the tide appears to be turning against UCITA, which is good news for IT buyers.

78 Frank Hayes says some attorneys general aren't letting up on Microsoft — and they shouldn't.

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ONLINE

MORE DOMINATION?

Is Microsoft going to dominate the enterprise as it has on the desktop? If so, what should be done about it? Join the discussion.
www.computerworld.com/meforum

CRM AND CRM

Tony Scott, chief technology officer at General Motors Corp., shares his thoughts on CRM, IT and other issues with *Computerworld* West Coast bureau chief Pimm Fox in the E-Commerce Community.
www.computerworld.com/community/ecommerce

ARE YOU UP TO THE TASK?

Microsoft restructured the Windows 2000 MCSE exams. Are you ready for the challenge? A professional trainer offers tips on how to prepare for — and pass — the new tests.
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AT DEADLINE

Court Ruling Clouds Spectrum Auction

Spectrum-hungry cellular carriers face the possibility that they will have to give up the licenses they bid almost $17 billion to obtain in a Federal Communications Commission auction in January. A U.S. Court of Appeals ruling on Friday could result in the return of the licenses to NextWave Telecom Inc., which originally won them in a 1995 auction for $4.7 billion. The Hawthorne, N.Y.-based firm went bankrupt and failed to meet its payment schedule, and the FCC repossessed its 90 licenses in 1998. The appeals court ruled that the FCC violated the bankruptcy code by taking back the licenses.

Former Officer Warns Of CIA Irrelevance

Unless the CIA can find a way to tap into IT advances in the private sector, it runs the risk of becoming an irrelevant player in the national security policy debates of the future, according to an internal agency memo made public last week. "I worry that the agency could see its usefulness diminish," wrote former CIA Inspector General L. Britt Snider. The major challenge facing the CIA, according to Snider, is the increasing ability of CIA customers, primarily the White House and the U.S. National Security Council, to use IT to collect, sort and manipulate intelligence information.

Short Takes

Milpitas, Calif.-based hard-drive maker MAXTOR CORP. said it will lay off 1,400 to 1,500 employees in the U.S. and Singapore during the next six months. . . . Fifty percent of CIOs said their companies aren't spending enough on IT, according to a survey of 103 CIOs by Reston, Va.-based TRANSITION PARTNERS CO. Only 5% said their companies spend too much. In a separate Transition Partners survey, 72% of 53 CEOs characterized their IT spending as "about the right amount."

Hospitality Players Check Out CRM

Firms struggle with integration, legacy systems in customer relationship quest

BY MARC L. SONGINI

For an industry that's so dependent on delivering good customer service, it's ironic that the hospitality sector has been so slow to adopt customer relationship management (CRM) tools.

But that's starting to change, as industry leaders such as Hilton Hotels Corp. in Beverly Hills, Calif., have recently begun investing in CRM systems to help them consolidate customer information so it can be used to develop expanded service offerings and mined for target-marketing campaigns.

"The hotels and hospitality companies in general are not early adopters," said Maureen O'Hanlon, an analyst at Marketing Arts Organization, a Minneapolis-based CRM consultancy. However, during the past five years, the industry has started to grasp the importance of CRM — especially as hotels face a downturn in bookings as a result of the slowing economy.

"I think that we as an industry have probably been [adopting CRM] at the pace of any industry," said Scott Heintzeman, CIO at Carlson Hotels Worldwide in Minneapolis, which operates the Radisson Hotels & Resorts Worldwide and other chains. "Not everyone has developed the same set of tools or capabilities. The ability to execute is quite varied," he added.

Among the hospitality companies looking to strengthen their CRM efforts is Las Vegas-based gaming and hotel giant Harrah's Entertainment Inc., which already has $75 million worth of Web, direct mail, telephone and customer-analysis systems. The firm wants to expand and integrate its CRM channels using software from vendors such as Teradata, a division of San Mateo, Calif.-based Siebel Systems Inc., or E.piphany Inc., also in San Mateo. Hilton is an E.piphany user.

Harrah's plans to install an automated campaign- and contact-management application that will run in near real time, said John Boushy, the company's CIO.

During the next two years, the system is expected to electronically tie together Web and e-mail campaigns, front desk services and even slot machines. For instance, if a customer played a slot machine for four hours in the afternoon, the system could advertise a lunch special on the machine's screen, said Boushy.

"What we will be struggling with is how to integrate all the capabilities seamlessly," he said.

Last week, Hilton also announced plans to roll out a reservation and information-access system based on software from San Jose-based OpenGrid Inc. In addition, the company plans to use software from Santa Clara, Calif.-based Broad Daylight Inc. to speed up and enhance its Web site for answering customer questions.



HEINTZEMAN: CRM use in the hospitality industry has been "varied."

Those efforts, which will cost about $1 million and take six months to complete, are expected to help users navigate more quickly through the tens of thousands of pages of Web content on Hilton's sites. Return on investment from the project is expected within a year by weaning customers off the phone and getting them to use the less costly Web site, according to Bruce Rosenberg, senior vice president of e-business at Hilton. ▶

Downsizings Leave Firms Vulnerable to Digital Attacks

Disgruntled castoffs pose security threat

BY JAIKUMAR VIJAYAN

During the current wave of corporate layoffs, companies should be extra vigilant about digital sabotage by disgruntled ex-employees, according to security analysts.

As employers pare down their payrolls to cut costs, many companies may unwittingly be leaving themselves vulnerable to hostile actions by discharged workers, including theft of confidential company information, illegal use of a company's IT resources and hidden "logic-bombs" that can destroy vital data.

"During times of an economic slowdown, it is common to see an increase in security incidents" caused by frustrated and hostile former employees, said Michael Rasmussen, an analyst at Giga Information Group Inc. in Boston.

That's why it's generally a good idea to thoroughly beef up existing security processes just before, during and immediately after large-scale layoffs, analysts said.

Common mistakes that contribute to the problem include a failure to disable the passwords and accounts of former employees, a lack of formal rules for the return of company laptops and handhelds and a failure to plug holes that make it possible for an ex-employee to exploit a former colleague's user account to gain illegal access (see chart).

Such problems are exacerbated during times of mass layoffs, particularly when IT staffers are given little advance notice and don't have enough time to finish the technical chores necessary to prevent sabotage, said Chris Wysopal, a director at @Stake Inc., a Cambridge, Mass.-based security firm that last week issued an advisory on the subject.

"If you don't have a very good termination policy and good record keeping of all the different access points that people had as employees, you are going to miss something," Wysopal said.

"Unfortunately, though, a lot of the time we hear from companies wanting to tighten their firewalls and intrusion-detec-

Security at Stake

@Stake's guidelines for limiting threats from disgruntled former employees.

MAINTAIN a log of all the perimeter connections made by employees. When someone leaves, it becomes easier to identify and close the holes this way.

CHECK for and close unofficial accounts that may have been set up by employees.

TERMINATE user accounts and disable passwords.

WORK together with all relevant departments to ensure smooth implementation of security processes.

ASP Industry Group Offers Insurance as Confidence Booster

Service providers protected with policies

BY KEVIN FOGARTY

A professional trade group today plans to roll out an insurance program designed to overcome one of the major remaining misgivings end-user companies have about application service providers (ASP): their financial stability.

The ASP Industry Consortium's insurance program will offer "protection against any of the risks to which [ASPs] could be exposed in the course of their business," said Paula Hunter, chairwoman of the Wakefield, Mass.-based industry group.

The policy provides financial protection against liability for Web content, such as slander, invasion of privacy or copyright infringement, and against an inability to supply the services customers expect.

The policy also protects ASPs in the event of hacker attacks and includes coverage of up to $50,000 for public-relations expenses to help rebuild the image of a service provider that's in trouble.

An insurance policy isn't the first thing Jim Buckmaster would look for in an ASP. But a policy that could guarantee the financial stability of an ASP, or at least provide remuneration if it were to fail, would provide some incentive, said Buckmaster, the president and chief technology officer at Craigslist.org, a San Francisco-based online classified ad and community bulletin board service.

"The financial health of companies we're doing business with is becoming a prime consideration in how we look at things like [Internet service provider] services," he said.

Most customers, though, probe a service provider's architecture, infrastructure and internal security policies, rather than its insurance policies, to make sure it can do the job and is stable, according to Kelly Emo, business development manager at ASP integrator Jamcracker Inc. in Cupertino, Calif.

"The key is that you just don't want to pick an ASP that's going to abandon you," said William Martorelli, an analyst at Hurwitz Group Inc. in Framingham, Mass.

"You need your [service-level agreement] and data-protection provisions. It's Outsourcing 101," Martorelli added.

Many ASPs have gone out of business in recent months, Hunter said. But so many large companies are offering applications as a service that the old picture of the stand-alone, start-up ASP isn't accurate anymore. "What we've found is that most ASPs that did go out of business did so because they couldn't get funding because they didn't have any customers, so the [impact on customers] has been relatively low," Hunter explained.

In a study to be released today, the ASP Industry Consortium reports that about 8% of companies surveyed use ASPs for one service or another.

The appeal of ASPs is broad, but not deep in any particular area, according to the study, which includes data from 1,983 respondents at businesses in 17 countries.

However, the percentage of companies surveyed that use ASPs is about the same no matter what business they're in, and the services they buy run a gamut so wide that it's hard to identify a leading application.

"It's a question of finding the right company with an outsourcing mentality and a point of pain that an ASP can solve," Martorelli said. "And that doesn't correlate with the market they're in."

tion systems only when they are actually laying off people," he added.

The key is to be prepared to deal with internal threats in the same manner as you would deal with external threats, said Matt Kesner, chief technology officer at Fenwick & West LLP, a law firm in Palo Alto, Calif.

Fenwick & West's policy for securing its networks after an employee leaves depends on the job role and level of access that the person had, Kesner said.

MOREONLINE
To learn more about security, visit the resource center on our Web site.
www.computerworld.com/resourcecenter

Measures range from simply disabling access and changing passwords to reconfiguring the network and changing IP addresses, remote access procedures and telephone numbers. A help desk staffer's exit would probably result in little more than basic changes, while the exit of a person with administrative access would drive much broader changes, Kesner said.

Fenwick & West plans to begin rotating the IP addresses of its virtual private network on a regular basis.

In addition, the law firm is implementing new token- and digital certificate-based access and authentication procedures aimed at addressing such issues, Kesner said.

It's crucial to keep track of employee movement and the kind of access they have in an organization, said Tom Montouri, a director of information security at Verizon Communications Inc. in Tampa, Fla.

Verizon, the victim of employee sabotage last May, has strict procedures when employees leave the company or are terminated. For instance, when an employee is terminated, it's the responsibility of the immediate supervisor to ensure that all access privileges are cut off, accounts are deleted and all assets are accounted for, Montouri said. In addition, the security group checks with the employee's supervisor to make sure that all processes are followed, he said.

Such steps augment internal security measures to ensure that all employees are given no more than "least-privileged access" to whatever services and functions they need to do the job, Montouri said.

Prices Plummet in Web Hosting Services Market

Economic downturn leads to firms grappling with excess data center space

BY JULEKHA DASH

The slowing economy has led to a glut of data center space, resulting in steadily plummeting prices in the Web hosting services sector.

Paula Hunter, chairwoman of the ASP Industry Consortium in Wakefield, Mass., likens the Web hosting market to the market for real estate, which fluctuates according to how well the economy is doing.

Web hosting firms are "offering other services to offset a loss in revenue or erosion in pricing," she said.

Vendors in this space, which include Exodus Communications Inc. in Santa Clara, Calif., and Globix Corp. in New York, didn't return phone calls seeking comment about whether the recent economic downturn has led to a slowdown in demand for their services or to price cuts.

But Ted Chamberlain, an analyst at Stamford, Conn.-based Gartner Inc., said the price of data center space has dropped by as much as 25% in the past year. Last year, companies charged $110 to $120 per square foot. Today, they're charging $75 to $80 per square foot, said Chamberlain, who expects further price cuts.

Interliant Inc., an application service provider in Purchase, N.Y., owns six data centers in the U.S. But Interliant President and CEO Bruce Graham said the company won't likely be affected by any pricing wars because data center operations account for only about 2% to 3% of its revenue. The bulk of Interliant's business is in providing managed services, he said.

Falling Prices
Price for data center space

2000	TODAY
$110–$120 per square foot	$75–$80 per square foot

SOURCE: TED CHAMBERLAIN, ANALYST, GARTNER INC., STAMFORD, CONN.

Analysts and vendors distinguish co-location, a type of service under which vendors provide bandwidth, floor space and basic monitoring for Web site servers, from more complex hosting services under which vendors actively manage the servers.

More vendors are shifting to the latter approach as the Web hosting market matures and co-location becomes a commodity, said Dana Tardelli, an analyst at Boston-based Aberdeen Group Inc. "Hosting is becoming a plain vanilla service," he said.

Falling prices may be good news for customers, but they're obviously bad news for vendors. Exodus' stock recently traded for less than $2 per share on the Nasdaq stock exchange, well off its 52-week high of $69 per share.

MORE THIS ISSUE
To read more about Exodus Communications, see page 52.

Oracle Launches Technology Offensive

CEO claims architecture superior to others'

BY DAN VERTON

Now that it considers the recent flap about its high prices to be old news, Oracle Corp. has initiated a new attack in the war of databases, this time on the technology front.

Since the launch this month of his company's latest database product, Oracle9*i* [News June 18], CEO Larry Ellison has taken to the streets with this simple and clear message: Oracle9*i*'s new clustering technology and its shared disk architecture allow users' systems to "run faster, less expensively and more reliably" than those with technology from IBM and Microsoft Corp.

Those companies are wedded to a database setup called the shared nothing architecture, which is outmoded, Ellison claimed.

However, experts, users and those other vendors said the technical realities behind Ellison's marketing campaign are more complex than his message suggests. The bottom line, said experts, is that while Oracle9*i* is an important step forward in database technology, IBM's and Microsoft's way of doing things isn't as futile as Ellison makes them out to be.

The debate over which is the better approach dates back to the 1980s, when the first commercial parallel-database architectures came into being. In shared disk clusters — groups of independent servers that cooperate as a single system — all servers have equal access to all of the data stored on multiple disks. In shared nothing clusters, data is partitioned across multiple disks, and each server has access to a subset of those disks.

Ellison's main argument is [illegible] Oracle9*i* is the first clustered database that can run so-called packaged applications, such as those from PeopleSoft Inc. and SAP AG, in an environment that he said offers limitless scalability and "basically just keeps running." IBM's DB2 and Microsoft's SQL Server can't do this, he said. He also argues that shared nothing is prone to single points of failure and requires bigger, more expensive hardware to scale.

However, the controversial chief salesman of Redwood Shores, Calif., has yet to prove anything, said his two chief rivals. "The proof is in the pudding, and we haven't seen any pudding yet," said Jeff Ressler, Microsoft's lead SQL Server product manager. Ressler said Oracle hasn't produced any industry-standard benchmark results to back up its claims and has yet to produce winning benchmarks on clusters.

Jeff Hunter, a senior program manager at IBM's data management group, said he's prepared to challenge every one of Ellison's claims and citing a lack of benchmarks added that those claims remain unproven.

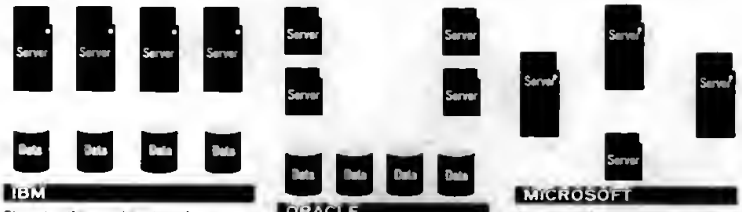
However, Ressler acknowledged a key point in Ellison's argument. "It's true that most packaged applications are not supported by shared nothing," said Ressler. "Shared nothing is not an availability approach. But most packaged applications do not need the scalability" of clusters, which Oracle fails to acknowledge, he said.

Richard Winter, president of Waltham, Mass.-based Winter Corp. and a top independent expert in database technologies, said Ellison's argument has strengths and weaknesses. For example, Ellison's claims that shared disk offers more flexible workload management and higher efficiency are on the mark. But Ellison's contention that a node failure on a shared nothing architecture means you lose part of your data isn't always true, said Winter. This is the case in only "the purest" of shared nothing architectures, he said.

"Shared nothing is ordinarily run with dual ported disks or with the data in a storage-area network in which all disks are physically accessible from all nodes," he said. Still, if two or more nodes fail, then Ellison's claims stand, he said.

The Great Database Debate

Each major vendor uses a different architecture. Oracle CEO Larry Ellison has launched an offensive claiming his product is technically superior.



IBM

Shared nothing architecture: Although [illegible] with a single [illegible] each one of the clustered [illegible] machine. Each [illegible] own set of data. Ellison says that this architecture [illegible] OS/390 [illegible]

ORACLE

Shared disk architecture: This approach is based on the assumption that every processing node has equal access to all data. All data remains available, even when only one cluster node is working.

MICROSOFT

Cluster architecture: In a cluster, SQL Server runs on one machine and, in the event of a failure, can be failed over to another machine. Windows 2000 Advanced Server supports two-node clusters, while Windows 2000 Datacenter supports four nodes (as shown).

BroadVision Muscles Into B2B Arena With New Apps

Offers central management for online catalogs

BY MICHAEL MEEHAN

Sales-side e-commerce software vendor BroadVision Inc. last week made a major play in the business-to-business arena with the release of its sixth-generation online business and marketplace applications.

The Redwood City, Calif.-based software company built its new applications based on Java technology. The applications have tools designed to let companies better control online catalogs, process electronic payments in real time and allow non-IT workers to make content changes in online offerings.

Powered by BroadVision's One-to-One Enterprise 6.0 platform, the new releases are the 6.0 versions of the company's Business Commerce and MarketMaker tools. Business Commerce creates a single portal through which all online sales can be managed. MarketMaker adds pre- and post-sales support for online transactions. All the tools were developed out of the company's original business-to-consumer offerings.

One of the main additions is the cataloging technology. Now, a company can manage its catalogs from a single source and use procurement software from companies such as Mountain View, Calif.-based Ariba Inc. or Pleasanton, Calif.-based Commerce One Inc. to handle transactions.

The 6.0 release is available immediately and costs about $500,000 with the One-to-One portal. Existing Business Commerce and MarketMaker customers will receive free upgrades as long as they have maintenance contracts.

Kent Allen, an analyst at Boston-based Aberdeen Group Inc., called online management of sell-side content key for future e-business efforts. He said companies like BroadVision, Blue Martini Software Inc. in San Mateo, Calif., and Intershop Communications AG in Hamburg, Germany, are well positioned to expand their personalized sales management tools into the larger enterprise arena.

Allen said customer relationship management software vendors will have a harder time delivering such products because they haven't tackled the larger commerce issues.

"BroadVision has also gotten lucky in that companies are less focused on enabling transactions online and instead are looking to push down costs by better managing their customers through online channels," Allen said. "That's where BroadVision's been with their portal, and now it's just a matter of expanding what the portal can do."

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Oracle Launches Technology Offensive

CEO claims architecture superior to others'

BY DAN VERTON

NOW THAT IT considers the recent flap about its high prices to be old news, Oracle Corp. has initiated a new attack in the war of databases, this time on the technology front.

Since the launch this month of his company's latest database product, Oracle9i [News, June 18], CEO Larry Ellison has taken to the streets with this simple and clear message: Oracle9i's new clustering technology and its shared disk architecture allow users' systems to "run faster, less expensively and more reliably" than those with technology from IBM and Microsoft Corp.

Those companies are wedded to a database setup called the shared nothing architecture, which is outmoded, Ellison claimed.

However, experts, users and those other vendors said the technical realities behind Ellison's marketing campaign are more complex than his message suggests. The bottom line, said experts, is that while Oracle9i is an important step forward in database technology, IBM's and Microsoft's way of doing things isn't as futile as Ellison makes them out to be.

The debate over which is the better approach dates back to the 1980s, when the first commercial parallel database architectures came into being. In shared disk clusters — groups of independent servers that cooperate as a single system — all servers have equal access to all of the data stored on multiple disks. In shared nothing clusters, data is partitioned across multiple disks, and each server has access to a subset of those disks.

Ellison's main argument is that Oracle9i is the first clustered database that can run so-called packaged applications, such as those from PeopleSoft Inc. and SAP AG, in an environment that he said offers limitless scalability and "basically just keeps running." IBM's DB2 and Microsoft's SQL Server can't do this, he said. He also argues that shared nothing is prone to single points of failure and requires bigger, more expensive hardware to scale.

However, the controversial chief salesman of Redwood Shores, Calif., has yet to prove anything, said his two chief rivals. "The proof is in the pudding, and we haven't seen any pudding yet," said Jeff Ressler, Microsoft's lead SQL Server product manager. Ressler said Oracle hasn't produced any industry-standard benchmark results to back up its claims and has yet to produce winning benchmarks on clusters.

Jeff Jones, a senior program manager at IBM's data management group, said he's prepared to challenge every one of Ellison's claims and, citing a lack of benchmarks, added that those claims remain unproven.

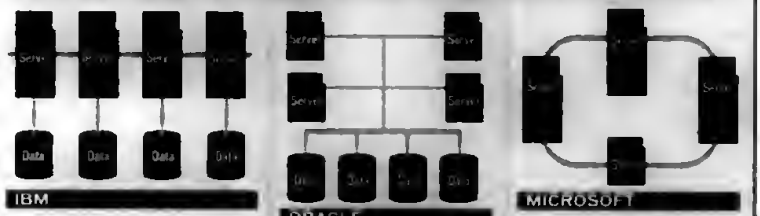
However, Ressler acknowledged a key point in Ellison's argument. "It's true that most packaged applications are not supported by shared nothing," said Ressler. "Shared nothing is not an availability approach. But most packaged applications do not need the scalability" of clusters, which Oracle fails to acknowledge, he said.

Richard Winter, president of Waltham, Mass.-based Winter Corp. and a top independent expert in database technologies, said Ellison's argument has strengths and weaknesses. For example, Ellison's claims that shared disk offers more flexible workload management and higher efficiency are on the mark. But Ellison's contention that a node failure on a shared nothing architecture means you lose part of your data isn't always true, said Winter. This is the case in only "the purest" of shared nothing architectures, he said.

"Shared nothing is ordinarily run with dual ported disks or with the data in a storage-area network in which all disks are physically accessible from all nodes," he said. Still, if two or more nodes fail, then Ellison's claims stand, he said.

The Great Database Debate

Each major vendor uses a different architecture. Oracle CEO Larry Ellison has launched an offensive claiming his product is technically superior.



Shared nothing architecture: Although the complete database is seen with a single system image, each portion of the clustered database lives on its own machine. Each machine has access to its own set of data. Ellison acknowledges that this architecture on the OS/390 "does a pretty good job."

Shared disk architecture: This approach is based on the assumption that every processing node has equal access to all data. All data remains available even when only one cluster node is working.

Cluster architecture: In a cluster, SQL Server runs on one machine and, in the event of a failure, can be failed over to another machine. Windows 2000 Advanced Server supports two-node clusters, while Windows 2000 Datacenter supports four nodes (as shown).

BroadVision Muscles Into B2B Arena With New Apps

Offers central management for online catalogs

BY MICHAEL MEEHAN

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BRIEFS

Wyly Seeks Control of Computer Associates

A group of investors led by Texas billionaire Sam Wyly last week announced a plan to stage a proxy fight to take control of Computer Associates International Inc. The group advocates ousting the current board, led by founder Charles Wang, and installing a new one that would elect Wyly as chairman. Wyly alleges that Islandia, N.Y.-based CA's mismanagement has hurt its shareholders, customers and employees. Wyly sold his company, Sterling Software Inc., to CA in March last year for almost $4 billion. CA will attempt to counter Wyly's move, the company said in a statement.

Feld Group Launches IT Investment Spin-off

The Feld Group, a Dallas-based CIO-for-hire venture, last week announced that it has formed a spin-off business to invest in and help develop emerging technologies. Called The Feld Partners Investments LP, the firm will draw on its parent's Fortune 500 CIO expertise to identify technologies that are currently unavailable in the marketplace. The investment arm has already provided capital and consulting services to software development enabler Contrado Inc. in Irving, Texas, and networking service provider Latis Networks Inc. in Westminster, Colo. Former Feld Group Chief Operating Officer Mike Koehler will be managing director of the spin-off.

Lotus Touts Wireless IM

Lotus Development Corp. last week announced its Sametime Everyplace 1.0 wireless application, which brings instant messaging to cell phones, personal digital assistants, Pocket PCs and other handheld devices for corporate users. The program features integration with Lotus Notes and supports open Internet standards. Sametime Everyplace will be available to corporate customers next month; pricing hasn't yet been announced.

Web-to-Pager Program Manages Calif. Energy

Could save users $48 million this summer

BY BOB BREWIN

THE CALIFORNIA energy crisis has led to the growth of power-demand aggregators, which pride themselves on producing "nega-watts" — wholesale reductions in power usage. One of those organizations uses two-way radio pagers and a secure extranet to manage demand reduction on short notice.

Gary Fabrizi, senior vice president of the Ancillary Services Coalition (ASC) in Laguna Nigel, Calif., said his organization has contracted with more than 250 heavy power users to shut off their power when an overload is expected to hit the state's electrical grid.

Fabrizi declined to identify the users but said total power consumption by those customers is about 1.2 megawatts, which is equivalent to the power required by 1.5 million homes.

To ensure that the ASC can quickly notify the user companies that they need to shut down their power, Fabrizi said, he selected a two-way notification system developed by Westlake Software Inc. in Calabasas, Calif. The system provides a point-and-click way to speedily notify hundreds of power users and quickly receive their responses.

Alan Gould, CEO of Westlake, said the ASC can log on to a secure extranet page, click on any number of users and send a short text message (100 characters or fewer) that alerts them of an upcoming power shutdown.

The Web page on the extranet maintains a list of users notified and records their responses as they come in. If power users don't respond to the page, the ASC follows up with a phone call, Gould said.

The software includes the Simple Mail Transfer Protocol address of each pager, so once the ASC clicks to send a message, it appears on the server of a paging company, which then transmits it via satellite or radio tower to the user.

Gould noted that his system is significantly cheaper than the telemetry-based approach recently adopted by Boise, Idaho-based Albertson's Inc. to automatically shut off the lights in 206 of its California grocery stores. "Why install a lot of expensive telemetry hardware when you can just buy an $80 pager?" Gould said.

The ASC's partners stand to reap significant cash benefits from participating in the demand-reduction program, through rebates from the Fresno, Calif.-based Independent Systems Operator (ISO), which manages the state power grid. During the four-month program, Fabrizi said, power users could save $96,000 per month for each megawatt of power they take off-line. The total return to the user companies over the summer could hit $48 million, he said.

Fabrizi said the ISO offers the rebates because taking power off-line has the same effect on the power grid as importing extra power.

Consortium to Promote 'Smart' Heavy Equipment

Wireless terminals help companies track their fleets

BY BOB BREWIN

A smart bulldozer?

It can happen, with standardized on-board plug-and-play wireless terminals that will be used by a variety of manufacturers of bulldozers and other heavy construction equipment.

That's the vision of Komatsu America International Co., which joined a wireless heavy-equipment consortium formed by San Diego-based Qualcomm Inc. last week. Vernon Hills, Ill.-based Komatsu America, a subsidiary of Komatsu Ltd. in Tokyo, has been selling its own smart terminals — capable of transmitting Global Positioning System (GPS) information and equipment utilization time — since December 1999.

But because Komatsu's construction company customers buy equipment from a variety of manufacturers, the company believes that developing standard terminals is the best approach for the industry, said Jeremy Tolbert, manager of Komatsu's equipment-tracking system. "The idea behind the consortium is to develop a basic terminal that could be used by all manufacturers," Tolbert said.

United Rentals Inc., the country's largest equipment rental company, said it joined the consortium to help push the development of standard terminals.

Fred Bratman, a spokesman for Greenwich, Conn.-based United Rentals, said that because his company rents equipment from all the major manufacturers, "it is critical for our business that we be able to effectively manage the fleet through standardized communications, regardless of the manufacturer."



"Smart" bulldozers and other heavy equipment would feature standardized wireless terminals.

The Komatsu terminals track engine hours and the location of the equipment. That data is relayed from an on-board GPS receiver via a satellite link for display on a Web page. But Tolbert said he wants to see development of terminals that can hook into engine diagnostic systems, sending an automatic alert when the oil needs to be changed, for example.

Peoria, Ill.-based Caterpillar Inc., the world's largest heavy-equipment manufacturer, has offered such a system for more than a year, according to company spokesman Ben Cordani. Caterpillar "pioneered this technology with our ProductLink system," Cordani said. "We can already do diagnostics." He added that the company hasn't decided whether it will join the Qualcomm consortium.

Moreover, Cordani said, Caterpillar has already developed a "bigger, better and smarter" product than ProductLink, called MineStar, which is installed on equipment such as earth graders. While the standard GPS on ProductLink provides location information to accuracies measured within feet, the enhanced GPS on MineStar determines position with "survey-grade accuracy, within 2 cm," he said. That data is fed to a driver's screen, which displays a color-coded map to guide a bulldozer as it digs, for example.

Such advanced systems "save our customers time and money," Cordani said.



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Cybersecurity Legislation Nears With CIA Testimony

Congressional hearing highlights risk of using unsecure software, foreign workers

BY PATRICK THIBODEAU
WASHINGTON

U.S. BUSINESSES will "increasingly become the point of attack for enemies of the U.S." by hackers and national governments using sophisticated weapons, such as worms and viruses, that can be controlled and used for targeted attacks, warned a top CIA official. He was testifying last week before a congressional committee.

Lawrence Gershwin, national intelligence officer at the CIA, said U.S companies are facing a range of threats posed by the growing use of foreign contractors and an increasing reliance on commercial software with known vulnerabilities in critical networks. There are also threats from sophisticated, state-sponsored cyberwarfare programs, Gershwin added.

Defenders in government and business "will be at some disadvantage until more fundamental changes are made to computer and network architectures — changes for which improved security has equal billing with increased functionality," Gershwin told the Joint Economic Committee.

The hearing was used to underscore the need for legislative remedies. Sen. Robert Bennett (R-Utah), who organized the hearing, will soon introduce legislation to exempt cybersecurity data from Freedom of Information Act (FOIA) disclosure requirements.

Private-sector trade groups have argued that the FOIA exemption will allow companies to share data with government agencies without risk of public disclosure.

Duane Andrews, a former assistant secretary of defense during the previous Bush administration and an executive vice president at San Diego-based Science Applications International Corp., pointedly told the committee that the U.S. is losing ground in protecting its systems. "The rate of progress has been slower than the growth of the potential threat," which can be blamed on a "failure to act," he said.

"For a decade, we have had study after study and report after report pointing out that our economy and national security . . . is at risk," said Andrews.

But, he said, the companies and government aren't taking steps for several reasons. First, policy makers don't understand the technological threat; second, investment in cybersecurity comes at the expense of some mission or business function; third, there is no oversight agency holding government and critical business functions accountable; and fourth, the issue is being treated as a tactical problem and not a strategic one.

Sizing Up Foes

The CIA sums up the threats.

Hackers: Lack requisite tradecraft but pose high threat of creating isolated or brief disruptions that can cause serious damage.

Hactivists: Most appear bent on propaganda rather than damage to critical infrastructures.

Spies, organized crime: Their goal is to steal, not disrupt.

Terrorists: Still prefer real bombs.

National governments: Have the discipline and resources to attack critical infrastructures.

Labor Department Teams With Monster.com

Job initiative among several launched at workforce confab

BY JULEKHA DASH

The U.S. Department of Labor and online job board Monster.com have launched a new partnership in which they will share their job databases with each another to provide the public with a more comprehensive pool of help-wanted listings.

The partnership was one of several initiatives that Labor Secretary Elaine Chao announced at the 21st Century Workforce conference in Washington last week.

The conference, featuring speeches by President George W. Bush, Federal Reserve Chairman Alan Greenspan and Microsoft CEO Steve Ballmer, focused on efforts to increase the government's dependence on technology to help it address workforce issues.

By teaming up with Maynard, Mass.-based Monster, the Labor Department can take advantage of the company's extraction technology, which lets users cull job postings from all Web sites, not just job boards, said Michael Boyd, an independent human resources consultant in Walpole, Mass. That could broaden the number of jobs that the Labor Department lists in its job bank.

Other programs announced included a $4 million grant to the Los Rios Community College district in Sacramento, Calif., to help disadvantaged individuals prepare for IT jobs, and a program to help disadvantaged youths participating in the Labor Department's Job Corps program earn high school diplomas through distance learning.

The Labor Department is also preparing to launch a new Web site designed to help disabled Americans enter the workforce.

AT A GLANCE

E-Job-Hunting

The Department of Labor's technology initiatives include:

- A program to help youths earn high school diplomas through distance learning
- A new Web site to help disabled people enter the workforce

GI Bill to Cover Cost of IT Certification Examinations

BY JULEKHA DASH

Starting this mooth, GI Bill beneficiaries can get reimbursed for technology certification through the Computing Technology Industry Association (CompTIA).

Lombard, Ill.-based CompTIA offers seven certification exams that cost between $100 and $200 each, in areas such as networking, server hardware and IT project management. GI Bill beneficiaries will be reimbursed for as many tests as they want to take.

CompTIA Workforce Development Program director John Engman said he expects most participants to seek A+ certification, which covers entry-level PC support, since that's the program's most popular exam.

Witbout the GI Bill reimbursement, "if you fail the test, there goes the money," said Carlos Rosa, a GI Bill beneficiary and network administrator at Advance Office Electronic Center Inc. in Carolina, Puerto Rico. Rosa, formerly a sonar technician io the U.S. Navy, applied for reimbursement for an A+ exam last week.

Rosa said that CompTIA certification, combined with certification from a leading vendor, can typically lead to an IT job and that certification exams are good alternatives to a four-year college degree.

Howard Rubin, a vice president at Stamford, Conn.-based Meta Group Inc., said he agrees that certification exams are a good way for IT workers to obtain short-term technical skills. But giveo the current downturn in the economy, it may not be wise for IT workers to forgo the long-term skills investmeot that a college degree provides, he warned.

To qualify for GI Bill benefits, military personnel must contribute $100 per month for their first 12 months of service. Veterans can receive up to $650 per month for 36 mooths If they attend schnol full time, and a fraction of that amount If they attend schnol part time, said Terry Jemison, a spokesman for the U.S. Department of Veterans Affairs.

Jemison said 1.3 million veterans participate in the GI Bill program. He estimated that 85% to 90% of them haven't exhausted their benefits.

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BRIEFS

Nader Wants 'Opt-In'

Consumer advocate Ralph Nader, joined by a coalition of privacy and consumer groups, last week called on Congress to amend the "deceptive" and "defective" Gramm-Leach-Bliley Act of 1999. The sweeping financial modernization bill allows financial institutions to share personal information about customers unless they opt out, or specifically tell the firms they don't want their information shared. Consumer advocates are pushing for "opt-in" policies, which prohibit firms from sharing their customers' information unless they opt in, or tell the companies it's OK to do so. Nader may get some support from Sen. Paul S. Sarbanes (D-Md.), the new chairman of the Banking Committee and a supporter of opt-in.

New.net Offers 10 More Domain Names

Start-up New.net unveiled 10 more alternative top-level Internet domains last week, just three months after it created 20 top-level domains outside the official Internet naming system. New.net said it wanted to create more naming choices for individual and corporate Web sites. Registrations for Web site names under the new domains cost $25 and are available now. The new domains – .arts, .school, .church, .love, .golf, .auction, .agent, .llp, .llc and .scifi – are viewable on standard browsers after changes are made to Domain Name System settings manually or using a free application available from New.net.

Short Takes

A high-volume live test of cellular telephone networks operated by the six major U.S. carriers showed that it can take as long as 10 minutes to deliver simple SHORT MESSAGING SERVICE messages. . . . Antivirus software vendor SYMANTEC CORP. lowered its first-quarter earnings forecast, blaming weak spending by consumers and small businesses worldwide, along with negative foreign currency effects.

Sprint Offers Cheaper Videoconferencing

At $30 per hour per port, business-grade IP service is half of ISDN cost, user says

BY JAMES COPE

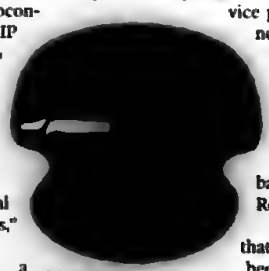
SPRINT CORP. last week rolled out a new videoconferencing service that the company said distinguishes it from top competitors by providing business-grade videoconferencing among multiple users over Internet Protocol networks.

The service, which uses equipment from Milpitas, Calif.-based Polycom Inc. and networking technology from Reading, England-based Ridgeway Systems and Software Ltd., as well as Sprint's own backbone, costs $30 per hour per video connection, according to a spokeswoman for Sprint.

A video connection, via a single port, could be a conference room videoconferencing system or a single camera on a desktop computer.

Gus Otto, a new technology architect at Caterpillar Inc. in Peoria, Ill., said this is a major move in videoconferencing. Otto said he's constantly experimenting with various videoconferencing technologies, including those from Polycom.

"The $30 price per port per hour for videoconferencing over IP is about 50% less than traditional videoconferencing that's done over ISDN [Integrated Services Digital Network] lines," Otto said.



POLYCOM'S cameras are part of Sprint's videoconferencing service.

Sprint uses a packet-management technology from Ridgeway that smooths the movement of video and audio packets through corporate firewalls and network address translation (NAT) devices without compromising network security.

As part of the new service, Sprint will resell Polycom's videoconferencing equipment, which starts at $599 for a single-camera system that connects to the Universal Serial Bus port on a PC.

"Sprint is the first major service provider to announce an IP videoconferencing program," said Andrew Davis, an analyst at Brookline, Mass.-based Wainhouse Research LLC.

Davis noted that there has been interest in video over IP by users and by video equipment vendors, but "until now, the service provider has been missing."

Continued from page 1

Decimalization

Washington-based Nasdaq has spent more than $10 million to triple the bandwidth capacity of its internal LAN and double the bandwidth of its WAN, according to Steve Randich, chief technology officer at the all-electronic stock market.

Yet for all its preparation, the volume of data on Nasdaq has risen a mere 12% since the switch from fractions to decimals in April, due to the slowdown in the economy, he said.

The full impact of decimalization has yet to be realized because impact estimates were made 15 months ago, during the market's peak, said Robert Hegarty, research director at TowerGroup in Needham, Mass. As people become more comfortable with using decimals, trading volumes will also increase, he predicted.

"Decimalization is evolutionary," Hegarty said. "I think what we will see is growth in trade volume [as the market comes back]. I think that increase will be exacerbated by decimalization."

For the NYSE, the volume of data moving across internal networks has risen just 20% since it completed a decimal conversion on Jan. 29 for all of the 3,525 stocks it lists.

Big Board Stays Steady

According to Robert McSweeney, senior vice president of market structure and new market initiatives at the NYSE, the bandwidth concerns raised by the prospect of decimalization have yet to materialize, but the stock exchange's network has been upgraded to handle an increase of a billion additional shares of stock per day. The average daily trading volume on the Big Board has remained relatively steady at around 1.2 billion since early February, according to NYSE officials.

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Sanjiv Gupta, a senior vice president at New York-based Bloomberg Tradebook LLC, an electronic communications network that handles large blocks of trades for brokerages like Merrill Lynch & Co., said trade sizes have shrunk since 2000.

Nevertheless, IT managers didn't take any chances and came up with capacity solutions that varied in cost and complexity to address a perceived need for increased network bandwidth. These approaches ranged from upgrading hardware and software and leasing more telephone lines to caching repetitive trade data on local networks.

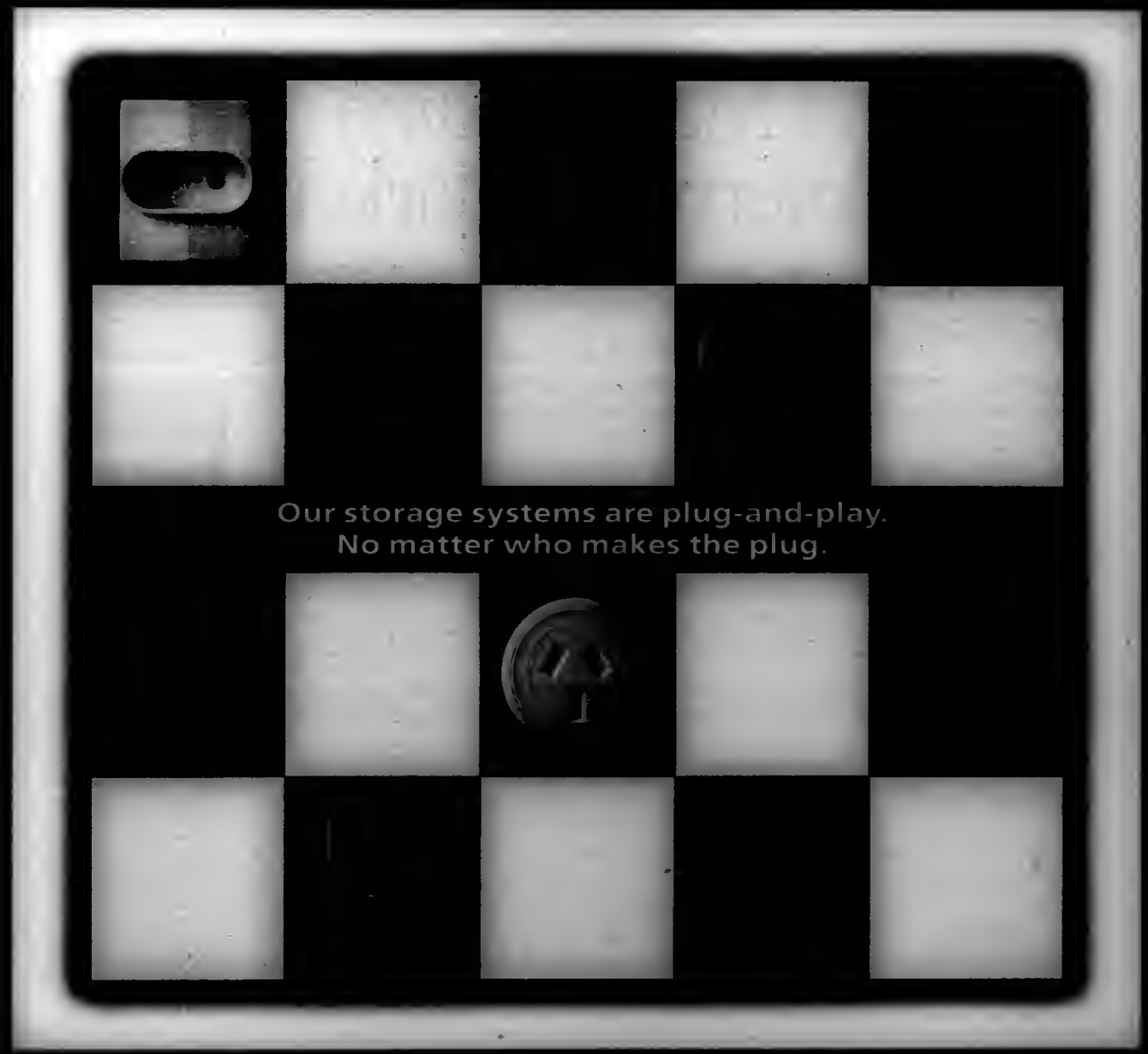
"We were able to achieve the capacity enhancement for decimals using our present architecture, a client/server model," said Randich, who added that Nasdaq upgraded both hardware and software for the changeover.

Craig Schlifstein, a managing partner at Blackwood Trading LLC, a Wall Street brokerage that also develops software for financial services firms, said he had expected his firm to see at least a two- to threefold increase in messaging volume. Schlifstein said his firm installed multiple T3 lines and a 1GB metropolitan-area network backbone that could handle a tenfold increase in data.

Tucker Anthony Sutro, a Boston-based brokerage with more than 100 offices nationwide, has experienced a 25% increase in data flow since April. Company executives said they believe that upgrading its network to increase the bandwidth or leasing additional telephone lines every month would be costly and time-consuming.

"We were looking at an additional $100,000 to $150,000 per year for additional bandwidth," said Keith McCullough, senior vice president of information systems at Tucker Anthony.

To hold those costs down, the firm instead opted for a caching device from Roseland, N.J.-based Expand Networks Inc. that stores recurrent data so it can be accessed locally without clogging the company's WAN. As a result, said McCullough, the caching devices have reduced Tucker Anthony's network data flow by 300% to 800% for the offices in which the devices have been installed.


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Microsoft Makes Gains In Enterprise Markets

But no chance vendor will dominate data center soon

BY CAROL SLIWA AND PATRICK THIBODEAU

TWO WEEKS BEFORE Christmas, Steve Ballmer delivered a memo to his 40,000 employees. "We have only begun to scratch the surface of competing in the market with the 'big iron' companies like Sun, Oracle and IBM," the Microsoft Corp. CEO wrote.

It was the sort of comment that can raise fears among competitors, given Microsoft's reputation for strong-arm tactics and signs that the U.S. antitrust case is in serious trouble.

Microsoft's enemies in the antitrust wars, such as the industry coalition ProComp, are already raising red flags that Microsoft could leverage its desktop market power to control the server software market and the Internet.

Some IT managers are wary of Microsoft's power, too, but most of the more than 40 corporate users and analysts interviewed said they don't think Microsoft will dominate the large-enterprise market, at least not in the next few years.

Ballmer identified the enterprise as one of Microsoft's top six priorities in a speech last month. So far, Microsoft group manager Barry Goffe said his company's $4 billion in enterprise software revenue is a "mathematically insignificant" portion of the $150 billion enterprise software market.

But in segment after segment, the Redmond, Wash., software giant is making a credible and sometimes even impressive showing. Analysts said it has enough momentum to overtake Lotus Development Corp. in the messaging and collaboration market, and it's surging in its mobile computing battle with Palm Inc., especially in the enterprise field.

Anyone's Game

Still, there are no signs that Microsoft is approaching the 70% to 90% market share that suggests monopoly power.

Take the server operating system market, for example. Microsoft has penetrated a majority of small businesses, and it has secured a solid place in midsize and large companies, especially for specific tasks: file and print serving, Web serving and application serving. But Windows will continue to battle Linux at the low end and commercial Unix at the high end, analysts said.

Even Microsoft's exalted position in the developer community, often viewed as a critical factor in the company's success, has taken a hit. Many large corporations now write applications for Java-based application servers, and Gartner Inc. in Stamford, Conn., predicts it will be a two-standard, Java/Microsoft world five years from now.

Microsoft's SQL Server has shaken off early ridicule to reach a solid No. 3 in the enterprise database market, but SQL Server still commands only a 15% market share.

That's not to say that Microsoft hasn't been laying the foundation to become a major enterprise player. It has courted developers, invested big in research and development, worked hard to improve its enterprise software and boosted its consulting capacity. Microsoft also continues to leverage one product off of another — bundling and integrating software while frustrating competitors.

The bundling, Microsoft's Goffe claims, simply reflects the market's determination of which products are commodity technologies. Some dispute that, but Goffe said when customers aren't willing to pay for a set of features but those features are beneficial, "there's a clear argument that something should be part of the operating system."

But ProComp, a coalition of vendors and trade groups that includes many of Microsoft's arch competitors, argued that customers will ultimately have little choice if the world's largest software maker is allowed to continue its bundling and integration unchecked.

Regarding integration, ProComp complains that one product often requires another to give users full functionality. For example, "Exchange [Server] uses Active Directory as the native database, so I have to buy Windows 2000 Server client-access licenses, regardless of whether I use Windows 2000 as my network operating system," said ProComp President Mike Pettit.

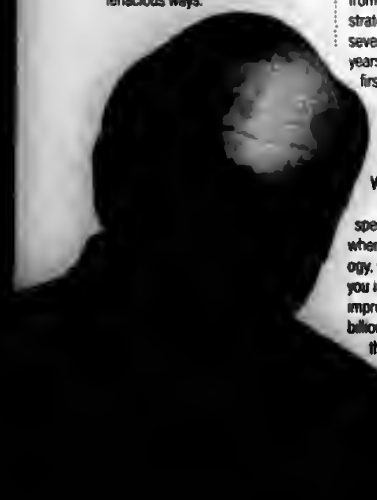
Goffe claimed that customers asked for one directory "where they can manage all of their assets and people across an enterprise." Microsoft isn't "engaging in some nefarious plot to lock out other vendors," he said.

Users have mixed feelings about Microsoft. The appeal of tightly integrated products that work well together is compelling for many companies.

Microsoft, page 22

Persistence Pays Off

Although Microsoft isn't dominating the enterprise market now, you can't rule it out in the next five or 10 years either, given the company's tenacious ways.



In recent speeches, CEO **Steve Ballmer** has talked about Microsoft's penchant for placing what he calls "big bets" on technology – from Windows NT to the new .Net strategy – and then having the perseverance to make them pay off years down the road. Even if the first version is ridiculed.

For example, Windows 1.0 was a disaster when it shipped in 1985. The desktop operating system didn't take off until Windows 3.1 shipped in 1992.

As Ballmer put it in a May 2 speech in Toronto: "These are bets where you build a piece of technology, you ship it, people don't like it, you improve it, they don't like it, you improve it again, five years later, a billion dollars into it, they like it and then you get huge [revenues] that spring from that."

– *Mitch Betts*

1 Server Operating Systems

Microsoft's relentless pursuit of the enterprise is perhaps no better exemplified than in the server operating system space.

Novell Inc.'s NetWare was king of server operating systems when Microsoft unleashed Windows NT 3.1 in 1993. Undaunted, Microsoft

2 Application Development Tools

Nothing lasts forever. That's what analysts are saying about Microsoft's clear-cut domination of the software development tools market, a position that has been eroded by the advent of the Web and Java.

Microsoft hopes to recapture

3 Database Software

Not so long ago, it was de rigueur for IT managers and analysts to ridicule Microsoft for selling enterprise database software that couldn't compete with Oracle and IBM in terms of scalability and reliability.

How times have changed.

Although Oracle and IBM still have rock-solid database engines, Microsoft's SQL Server has been slowly gaining ground and more

4 Mobile/Wireless Computing

At an industry conference in March, an assistant showing off Microsoft's new "smart" wireless phone referred to it as "The Avenger." CEO Steve Ballmer jumped in, saying, "That's only our code name," and then called it by its public – but also not-so-benign

Microsoft earns 41% of market, but Linux, Unix, NetWare stand in the way.

BY CAROL SLIWA

directed its troops to strive for improvement, and within five years, the Windows server operating system usurped NetWare.

IDC in Framingham, Mass., said Microsoft's Windows 2000 and NT account for 41% of new license shipments. "It's one of the most amazing growth stories we've ever seen," said IDC analyst Dan Kusnetzky.

Yet despite Microsoft's success, particularly in small to medium-size businesses and corporate departments, many analysts predict it won't achieve the same level of dominance in the server market that it commands with its desktop operating system.

"We don't anticipate [Microsoft] getting into a dominant position in the server market through our [2005] forecast period," said IDC analyst Al Gillen, "because there will continue to be competition from Linux, Unix and NetWare. Those other operating systems have not just folded up shop and gone away."

"Most [enterprise] organizations are going to be heterogeneous. We don't see any one operating system [dominating]," said Colleen Niven, an analyst at Boston-based AMR Research Inc. Niven said Windows NT/2000 may be dominant for file and print services and gaining ground as an application server, but it's not the primary operating system for databases or e-commerce with her large clients.

KeyCorp runs about 1,500 Windows NT and Windows 2000 servers for file-and-print services, Web serving, office applications, some homegrown applications, some transaction processing and its development environment. Yet more than 95% of its applications and the vast majority of its databases run on four IBM mainframes and about 170 Unix boxes from Hewlett-Packard Co. and Sun Microsystems Inc.

"We are a financial institution. We take care of people's money. We don't reboot servers. We're not going to tell people we can't do something because the system's down," said Bob Dutile, senior vice president of KeyCorp's enterprise architecture group. "If Microsoft wants more of our dollar, Microsoft will have to be as reliable as an IBM mainframe."

The 32-bit Windows 2000 Datacenter, Microsoft's answer to high-end Unix systems, has been slow to take off. In a recent setback, HP and Compaq Computer Corp. scrapped plans to sell 32-processor servers.

Microsoft's domination of programming tools is being eroded by Java.

BY LEE COPELAND GLADWIN

market momentum with its .Net initiative launched last year. The nearly year-old .Net platform and its accompanying Visual Studio.Net tools aim to provide an alternative to Web development with Java, Microsoft officials said.

"The primary mission of .Net is to make it easier to build server-side Web applications," said Mark Driver, an analyst at Stamford, Conn.-based Gartner Inc.

Three years ago, Microsoft's Windows Distributed Net Architecture and Distributed Component Object Model attempted to make Web development easier for Microsoft's Visual Basic, C and C++ developers. But the architecture proved too complex.

Enter .Net, which addresses Web-based server-side development. But, Driver added, Microsoft still needs to "dumb down" the complexity of the new platform.

There are about 3 million Visual Basic developers today, compared with about 1 million Java developers, Gartner reported. But by 2005, the market research firm expects Java's developer ranks to grow to 3 million, while Visual Basic (VB) developers will remain steady at 3 million.

"Microsoft has lost some market share with developers over the years, but they still have a gigantic VB community, and they are in a position to lose it," said Evan Quinn, an analyst at Hurwitz Group Inc. in Framingham, Mass. "The trick for Microsoft is to not have any stragglers."

While it appears that many organizations with extensive Microsoft investments will stick with the vendor's technologies, many users have voiced a mix of cautious optimism and confusion about the .Net package.

Online health insurance claims processor NaviMedix Inc., for example, considered switching to a Java-based environment last year, said Chuck Grindel, a software engineer at NaviMedix. But the Boston-based company opted to stay with Microsoft because of existing investments in Microsoft servers, databases and custom-developed applications, he said.

Grindel said the company didn't see a compelling reason to switch to Java, but it also doesn't see a compelling reason to move to .Net yet.

Rob Green, Microsoft's product manager for Visual Studio, said that new tools will target the hard-core coders and the business software architects.

No longer ridiculed, SQL Server comes of age as the No. 3 player behind Oracle and IBM.

BY DAN VERTON

than a little respect in recent years.

Gartner Inc. reports that SQL Server's market share on Windows NT-based systems jumped to 38% last year, surpassing Oracle8i for the top slot in that market segment. Although Microsoft remains in third place in the overall database competition, with 15% of the market, Gartner analyst Betsy Burton said the race for dominance is far from over.

There's a growing list of companies using Microsoft's database to power their enterprises. From Barnes & Noble Inc. to RadioShack Corp. to Nasdaq Stock Market Inc., SQL Server is making inroads into some of the biggest companies on the Web. And reports of problems on the scalability and reliability front are becoming rarer.

Smead Manufacturing Co. in Hastings, Minn., processes more than 1,100 transactions per second and has the capacity to handle up to 3,000 per second, said Joe Voesen, vice president of information systems. "We have proven that people now have a viable option [with SQL Server]," he said. "We've got 30 to 40 major software modules. . . . It's not a little popcorn stand."

Industry benchmark tests have shown SQL Server to be capable of handling more than a million transactions per second and 30,000 concurrent users. Still, Burton said, "you are compromising if you go to [SQL Server] for pricing alone," because reliability and scalability remain problem areas.

"There are technical trade-offs no matter what you are choosing between," said Jeff Ressler, lead product manager for Microsoft SQL Server. "In the end, most customers are looking for a scalable database that delivers the features they need to run their business."

Wolfgang Gaeck, CEO of IT consultancy Metaphor Technologies Inc. in Colorado Springs, decided in 1999 to go with SQL Server on the basis of price alone. "I have since come to really like the product, and I felt initially that the price, performance [and] capabilities of SQL Server were unbeatable and have not regretted my decision," he said.

As Microsoft prepares for the 2002 release of the next major version of SQL Server, code-named Yukon, it commands a strong position in the database market, said James Governor, an analyst at Illuminata Inc. in Nashua, N.H. Although the current version of SQL Server doesn't offer the same tools and data management capabilities that Oracle and IBM offer, "its database performance has improved dramatically," he said.

Pocket PC emerges as a strong contender in the enterprise market.

BY BOB BREWIN

– name, Stinger.

Names like Avenger and Stinger are among the many signs that Microsoft intends to take aggressive action against rivals such as Nokia Corp. in Espoo, Finland, and Palm Inc., while intertwining its mobile offerings in the fabric of the company's .Net strategy.

The mobile market has emerged as Job 1 at Microsoft, Ballmer said. The Stinger phones, he said, will play a key role in extending the company's Exchange e-mail service – which has 68 million users – from behind the corporate firewall to mobile users.

Microsoft is also planning simpler phones that feature a specially crafted version of its Mobile Explorer browser, which is capable of running on the small screens of Wireless Access Protocol phones.

Yet much of the company's effort in the mobile arena has been focused on the Pocket PC, aimed at the handheld market of Santa Clara, Calif.-based Palm and its Palm OS licensees.

Introduced in April 2000, the Pocket PC has started to gain significant mind and market share from Palm and its partners, especially in the key enterprise market, where sales can run to the hundreds if not thousands of units.

The Pocket PC has already captured 18% of the handheld device market and is headed for a 40% share in 2004, said analyst Kevin Burden at IDC. Gartner Inc. predicts a 50% share by 2003.

Microsoft officials said one reason for the growing market share is an extensive outreach to the developer community. Another reason is that the company offers a wide range of wireless connectivity options.

Ed Suwanjindar, a Microsoft product manager, acknowledged that Microsoft "did not get it right the first time" with early versions of the Windows CE operating system that powers the Pocket PC, but he boasted that "Palm is now trying to catch up with us," because Microsoft's technology is offering more functionality.

Some enterprise users agree. Hotel chain Wyndham International Inc. in Dallas has already started to install a Palm OS wireless check-in system – a system in development before the Pocket PC launch. But CIO Mark Hedley said he would now prefer the Pocket PC. "It's more functionally rich. The Windows CE operating system has more to offer today than the Palm, which I find very limiting," he said.

Microsoft's Other Battle

Europe's antitrust probe continues

BY PATRICK THIBODEAU
WASHINGTON

The European antitrust investigation of Microsoft's business practices has been overshadowed by the U.S. case, but it could ultimately emerge as Microsoft's biggest legal threat.

To understand why, turn the clock back to 1982, when the U.S. dropped its antitrust case against IBM after a 13-year legal quagmire.

It was a different story in Europe.

The European antitrust investigation eventually led to a voluntary settlement in 1984, which required IBM to license application programming interfaces (API) that vendors needed to build compatible equipment in advance of product releases.



THE EUROPEAN Commission could impose fines on Microsoft.

Gregory Handschuh, general counsel at Amdahl Corp. in Sunnyvale, Calif. — one of the companies that lodged a complaint about IBM with European authorities — said the settlement was very important to his company. "We were assured of having access to information that was essential for us to continue in the business that we were then in," said Handschuh.

Today, it's Microsoft facing Euro-scrutiny. The European Commission is looking into allegations that the company withheld API information on its PC operating systems, creating a de facto need to use Windows server software to achieve full interoperability — a charge that echoes the earlier IBM complaint. The commission is also examining whether the Windows 2000 operating system is being used to leverage its dominance in PC systems to gain control in a second market: servers.

With the U.S. antitrust case flagging, Microsoft's legal opponents are beginning to pin their hopes on Europe.

"It's entirely possible that the industry can get the relief in Europe that has to this point been denied them in the United States," said Ken Wasch, president of the Software & Information Industry Association, a Washington-based trade group that supports the U.S. government's case against Microsoft.

Experts said it's very doubtful that the Europeans would seek a break-up of Microsoft, but conduct restrictions or heavy fines are possible. The European Commission "can certainly do a lot of damage to Microsoft," said Luke Froeb, an antitrust expert at Vanderbilt University in Nashville.

Microsoft has been cooperating with the European investigation and is defending itself against the allegations. Microsoft spokesman Jim Cullinan said the company has been giving its API information to developers and competitors to ensure operating system compatibility. And Cullinan said Windows 2000 Professional can be used with any server product.

Some end users in Europe expressed skepticism about the case. "It always takes a lot of time to get a decision out of the European Commission," said Francois Dumas, director of IT infrastructure and planning at ACNielsen Corp. in Amsterdam.

Horst Herlemann, CIO at Lufthansa AG in Frankfurt, said end users "would like to have a certain protection against monopolistic approaches. . . . We would like to have choices, even if Microsoft is still as good as it seems to be."

IDG News Service reporter Paul Meller contributed to this report.

5 BizTalk Server fills out Microsoft's integrated product line. BY CAROL SLIWA

E-Commerce Software

The shipment of BizTalk Server earlier this year marked an important milestone for Microsoft.

BizTalk Server, the XML-centric software that Microsoft hopes will make it a player in the business-to-business e-commerce space, filled a key missing link in the company's arsenal. Now, Microsoft feels it can tout a full, integrated product package, as BizTalk joins its most stable operating system, its most powerful database and its most feature-rich software for creating online stores.

"We have enough of the pieces of the puzzle to give [customers] a complete solution. We definitely have more people asking about it," said Paul Oka, general manager at the Waltham, Mass.-based Microsoft Technology Center.

Overall, Microsoft's e-commerce approach falls in line with those taken by companies such as IBM, Oracle Corp. and Sun Microsystems Inc. The major difference is in application servers and development environments, as Microsoft promotes its .Net/COM+ tools and the others favor Java.

"Increasingly, customers like to buy from a single vendor" to achieve a consistent, integrated platform for application development and deployment, said Jane Stanhope, an analyst at Giga Information Group Inc. in Cambridge, Mass.

While Microsoft boasts some noteworthy customers, including Barnes & Noble Inc. and 1-800-Flowers.com Inc., it's too early to tell if Microsoft will become a dominant force in the ever-fluctuating, highly fragmented e-commerce software market.

Microsoft's Commerce Server, the storefront-creation and order processing software (formerly known as Site Server), gives Microsoft just 12% share in a market led by Redwood City, Calif.-based BroadVision Inc. (25%), according to Giga.

BizTalk Server is geared toward business-to-business e-commerce and enterprise application integration. It has a low market share, but it just began shipping in January. And it shows promise.

"If I'm a Microsoft shop, I'm going to be more likely to use BizTalk mostly because of price and because it's an integrated part of the solution," said Colleen Niven, an analyst at Boston-based AMR Research Inc. "Those are the two things most small to medium-size enterprises look for."

Even a large enterprise such as banking giant KeyCorp. in Chicago is intrigued by BizTalk Server. Bob Dutile, senior vice president of KeyCorp's enterprise architecture group, said he likes Microsoft's promotion of XML and Simple Object Access Protocol through BizTalk. "If Microsoft keeps going down that open-standards road, then we're going to be very interested in them," he said.

Yet customers must also recognize that BizTalk Server runs only on Windows and has a dependency on SQL Server, said analyst Peter O'Kelly at Boston-based Patricia Seybold Group Inc. "The synergy between Windows and BizTalk Server and Commerce Server and SQL Server is just going to get tighter, and it's already pretty good," he said.

6 Exchange is catching up to Lotus and has momentum to overtake it. BY JENNIFER DISABATINO

Messaging and Collaboration Software

Microsoft is catching up to Lotus Development Corp.'s Domino and Notes in corporate messaging and collaboration systems, but the future is murky because of the emergence of Microsoft's .Net collaboration plans.

Neither Microsoft Exchange nor the product line from Cambridge, Mass.-based Lotus is dominant right now. At last official count, Exchange had about 68 million licensed seats, or users, and Domino had 76 million.

Most analysts agree that Domino is still better for building applications, and security in Notes far outstrips that in Outlook. And some large corporations, including Exxon Mobil Corp. and GlaxoSmithKline PLC, recently said that they will standardize on Notes.

But Framingham, Mass.-based IDC reports a 33% growth in Exchange users from 1999 to 2000, vs. only a 12% growth rate for users of the IBM subsidiary's Domino platform. As the IDC report put it: "Microsoft has finally caught up to IBM in number of new users and has the momentum and mind share to take the lead this year."

Why? IDC analyst Robert Mahowald cited the following reasons:

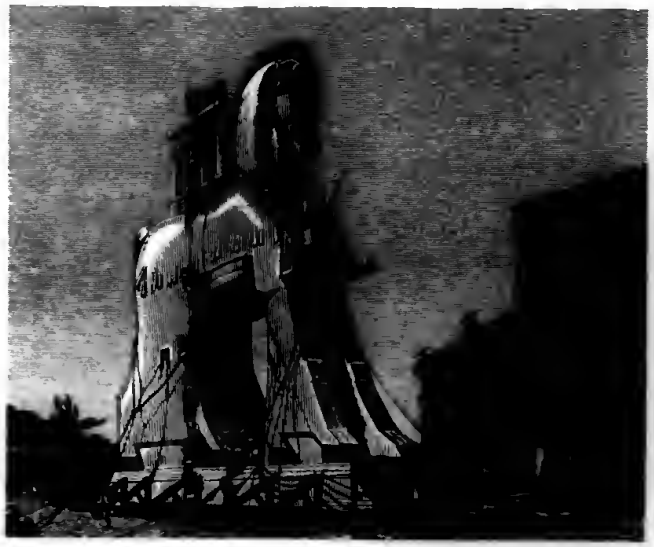
- Microsoft has an end-user interface that's easier to use.
- Microsoft has success in having application service providers adopt Exchange as a hosting platform.
- Microsoft has a broader range of back-office products that readily link to the Exchange program.
- Microsoft's licensing policy encourages users to buy into multiple products.

New features in Exchange 2000, Outlook 2002 and Office XP suggest that Microsoft's technology is catching up, too. But upgrading is painful, costly and will take a long time, said analyst Dana Gardner at Aberdeen Group Inc. in Boston.

The problem is that an Exchange upgrade may take so long that, by the time it's done, the competition may have advanced some more. Plus, the Web-based collaboration of .Net may make Exchange pointless anyway - if it works.

Microsoft is also touting the linkage among its applications, enabling an end user to send a Word document through Outlook while still working in Word, for example. The addition of instant messaging to the Windows XP desktop also means that users will be able to share applications in real time, provided they're Microsoft applications.

However, Ed Malloy, manager of information services at BBL Fleet Inc., a Bridgeville, Pa.-based company that manages corporate car fleets, said he fears Microsoft's new Passport password service will permeate all Microsoft products and "will make their documents somehow unusable except through Passport-enabled applications."



"Well, it looked like a friendly horse."

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TO YOU, IT'S *A FRIENDLY MERGER.*

TO YOUR OPERATING SYSTEMS, IT'S A HOSTILE TAKEOVER.

THE DOTTED LINES have been signed. Everyone has shaken everyone else's hand. The easy part is over. Now you just have to create an infrastructure that integrates and accommodates your legacy systems, their legacy systems, the systems your largest customer just installed, your old databases, your new databases and your proposed wireless applications. Basically, you have to find a way to make systems work together that were never designed to work together in the first place.

This is probably about the time when you realize you could use the experience, technology and resources of a company like IBM. Frankly, e-business integration is tough. And the smartest move you can make is to work with a company that has the depth and knowledge to deliver integration at every point in the technology chain.

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Continued from page 16

Microsoft

Three years ago, Air Products and Chemicals Inc. in Allentown, Pa., decided to go Microsoft-centric for just that reason. "We can leverage our [IT staff's] skills and knowledge better," said Roger Gariepy, the company's chief information technologist.

But one-stop shopping can also inspire fear among those concerned about competition. "You'd like to see a total solution from one vendor. However, you don't want that to be the only vendor in the marketplace," said Robert Rosati, director of information systems at Werner Co., a ladder manufacturer in Greenville, Pa.

"[Microsoft has] incredible resources, both human and capital, so whatever they decide to dominate, they will dominate, and nobody can compete with them," said Cecilia Claudio, CIO at Farmers Group Inc., a Los Angeles-based national insurance company.

Claudio said she will deal witb Microsoft's power and arrogance by becoming "much more aggressive" about seeking alternatives to the vendor. One reason: She said Microsoft's new licensing policy will increase her costs [Page One, May 14].

Microsoft would need to jump a considerable number of hurdles to become a dominant force in the enterprise market, analysts said. Some IT managers still harbor doubts about Microsoft's scalability and reliability claims. And Gartner research shows that Microsoft's intended challenger to high-end Unix boxes — Windows 2000 Datacenter Server — is off to a slow start, with no more than 200 deployments.

But maybe a bigger hurdle is simple inertia. Large corporations aren't inclined to rip out mainframes and Unix boxes from entrenched vendors that are working just fine.

For instance, it would cost $4 million to $5 million for Los Angeles-based Paramount Pictures Corp. to move its core accounting systems off an IBM mainframe onto a Microsoft platform, said infrastructure architect James Willard, and the move wouldn't gain the company anything. "That's the cost to shoot one episode of *Frasier*," he said.

"In a very large organization with very large data processing needs, you don't see Microsoft in [a dominating] role," said Bob Dutile, senior vice president of enterprise architecture at banking giant KeyCorp. in Cleveland. He said the notion of Microsoft dominating the enterprise isn't "within the realm of possibility" in the next three years.

For Microsoft to have a stranglehold on enterprise software, IBM and Oracle would have to fail, Gartner analyst Tom Bittman said. "Will IBM and Oracle both fail? No. They're all going to be fighting it out, and it's going to be a tootb-and-nail fight."

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BRIEFS

Intel Cutting Switch, Router Product Lines

Intel Corp. said last week that it has decided to phase out its large general-purpose router and switch products, a move that will lead to the closing of part of the company's operations in Denmark and result in several hundred job cuts in the U.S. and Canada. The affected employees work on research and development for Intel's switches and access routers and are based in Copenhagen, Toronto, San Diego and Bedford, Mass.

Court Rejects L&H Restructuring Plan

A commercial court in Ieper, Belgium, last week rejected the restructuring and recovery plan filed by Lernout & Hauspie Speech Products NV (L&H). The presiding judge criticized the plan, saying it lacks clarity and is based on wishful thinking. He extended the bankruptcy protection period for the company to Sept. 30 and ordered L&H to draft and file a new plan by Sept. 10. A hearing on the new plan has been scheduled for Sept. 18.

Compaq Boosts Linux Development Support

Compaq Computer Corp. unveiled a range of programs last week designed to attract developers to the Linux operating system and create more Linux applications for everything from servers to handheld devices. Compaq executives claimed that their initiatives will be more than sufficient to help the company compete with IBM, another Linux advocate, which recently said it would pump $1 billion into its Linux business. In addition, the vendor said it will work to make it easier for developers to move applications between its Tru64 version of Unix and systems running Linux. Compaq will also contribute to efforts on the Linux kernel, joining Oracle Corp.'s Linux Lab project to improve the operating system.

MySAP Sells Despite Foggy Marketing

Users, SAP sales staff still unclear about product, but 3M seats added in past year

BY MARC L. SONGINI

According to analysts, SAP AG appears to be better at writing the code for mySAP.com than it is at marketing the e-business platform that it has been rolling out during the past year.

Yet despite a slow start and a cloudy sales message, the number of mySAP.com users has grown by 3 million in the past year, bringing the number of user seats to 4 million, SAP officials said at the recent Sapphire 2001 user conference in Orlando.

The mySAP.com e-business platform includes traditional enterprise resource planning (ERP) functions, as well as customer relationship management (CRM), product design and supply chain management modules. SAP will also absorb its ERP flagship product, SAP R/3, into the mySAP.com platform as R/3 Enterprise Server.

At last year's conference, some users were hesitant to commit to the mySAP product line, and there was some confusion about what it was. One user found a pilgrimage to SAP's headquarters necessary for enlightenment.

"I am not sure I had a clue [about mySAP.com] or that SAP could define it to me well at all until we went to SAP headquarters in Walldorf, Germany," said Ladd Nichols, director of global strategic information systems at Kimberly-Clark Corp., a Dallas-based maker of consumer products. "Then we saw and understood the vision."

But if users are confused, they're in good company. SAP is still learning how to sell, implement and exploit mySAP.com, said Bruce Richardson, an analyst at Boston-based AMR Research Inc. Sales representatives need to know who they should be selling to, he said.

Widening Its Appeal

As the number of modules and functions increases, mySAP.com should appeal to potential customers in a wider range of business departments, Richardson noted. For instance, the mySAP.com CRM module isn't just for sales and marketing departments; it's also for supply chain personnel.

"I think they need to go back and publish a framework that everyone can see, including SAP employees," said Mike Schiff, an analyst at Current Analysis Inc., a Sterling, Va.-based consultancy. MySAP.com's function has been a moving target all along, he said.

Last year, when SAP began to offer details about mySAP.com, it appeared to be a Web portal product that would let users access pieces of R/3, Schiff said.

Now it appears that it will be a role-based platform that will let users access ERP applications and CRM and data-warehousing modules, depending on users' individual needs.

Those features appeal to Acterna LLC, a Germantown, Md.-based maker of testing and management products for cable and optical transport networks.

Acterna CIO David Bent said he understands how some companies might be confused by the concept of mySAP.com. But the application's role-based function was clear enough to Bent that he decided to begin a $40 million rollout of SAP throughout the company's global enterprise. ▶

AT A GLANCE

It's All in the Numbers

- According to SAP, **15,000 companies**, or roughly 10% of its worldwide installed base, have migrated to **mySAP.com.**
- The company predicts that **80% to 100%** will eventually move to the e-business platform in the next five years.

Red Hat Tips Cap to Database Customers

Linux vendor continues effort to expand offerings

BY TODD R. WEISS

Linux operating system vendor Red Hat Inc. is expanding its offerings this week with the introduction of its first database application.

Michael Tiemann, Red Hat's chief technology officer, said in an interview last week that the new offering will continue the company's trend of adding technologies as customers request them.

"Customers are looking for more integrated solutions from open source, and we see that as a natural opportunity to supply database technology on our Red Hat Linux platform," Tiemann said.



TIEMANN: Demand created a "natural opportunity" for Red Hat.

In January, Research Triangle Park, N.C.-based Red Hat acquired e-commerce applications from open-source software vendor Akopia Inc. in Reston, Va. Last August, Red Hat acquired Oakland, Calif.-based C2Net Software Inc., the company that created the Apache-based Stronghold secure Web server.

Tiemann declined to provide further details about the database, which is being unveiled today.

Market Challenges

Stacey Quandt, an analyst at Giga Information Group Inc. in Norwell, Mass., said it's uncertain how successful Red Hat will be in the database market and noted that much will depend on which business customers the company targets.

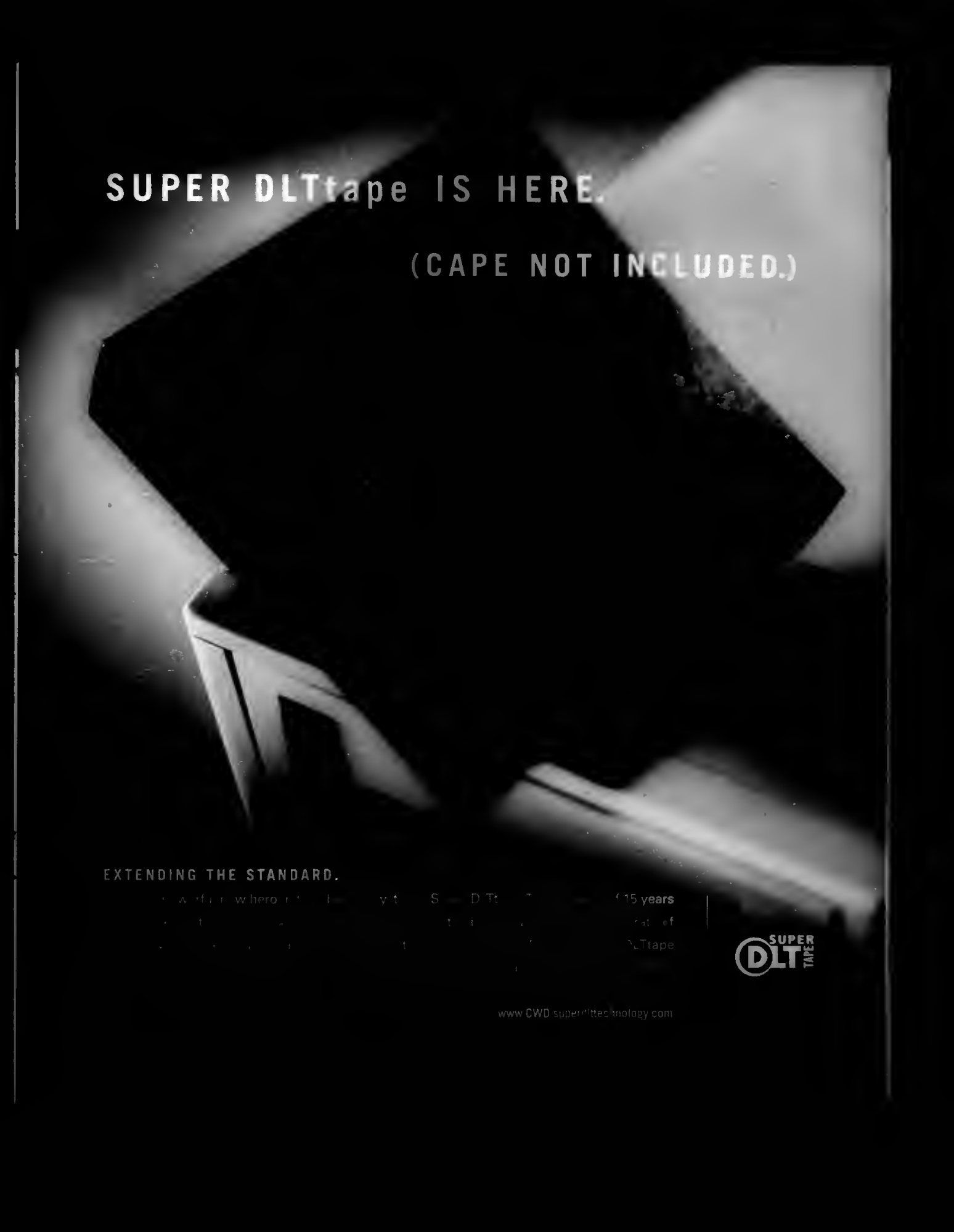
"There's a challenge to them getting acceptance" from enterprise database customers because of scalability limits with Linux, Quandt explained.

"It will only appeal to certain database market segments" such as midsize and smaller businesses with less-complicated needs, she said.

How Red Hat will sell the database is also uncertain, Quandt said, though bundling agreements with hardware partners is one possibility.

Red Hat has signed several key deals in recent months. Among them are a contract with Thrifty Car Rental in Tulsa, Okla., to use Red Hat Linux for database configuration and reporting systems, and a deal with the New York-based National Hockey League's NHL.com Web site to use IBM Linux systems running Red Hat Linux 7.

Red Hat's financial results for the quarter ended May 31 showed revenue of $25.6 million, up 18% from $21.7 million reported for the same quarter a year ago. ▶


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MARYFRAN JOHNSON

The Power of You

CONGRATULATIONS, YOU DID IT. The collective power of irate IT customers finally forced Oracle to listen. Last week, the database bully beat an overdue retreat from its exorbitant pricing models ["Oracle Retreats," Page One, June 18]

d eliminated the widely despised iversal Power Unit pricing. The shift to per-processor pricing put Oracle in line with the way rivals IBM/Informix, Microsoft and Sybase charge for their enterprise database systems.

"It's about time," one Oracle reseller told us.



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

It's also about the power of you. Especially those who were willing to go on the record with *Computerworld* and vent your objections. This was feedback that Oracle refused to hear for the past year, but you persisted.

I can attest to how annoyed Oracle officials have been with user pricing complaints and our aggressive coverage of them. Three months ago, in a classic kill-the-messenger response to reporter Dan Verton's March 19 story ["Users: Oracle's Prices to Blame"], the database giant yanked all of its advertising pages from *Computerworld*. Actually, Oracle's initial punishment was to pull its ads not only from *Computerworld* but also from any publication of our parent company, International Data Group.

A flurry of meetings took place between IDG publishers and Oracle reps, naturally enough. Publishing ventures are heavily supported by what advertisers pay. But no editors were called on any carpets, eloquent testimony to IDG's long tradition of separation of "church and state" (editorial and advertising).

A few weeks after its initial fit of temper, Oracle relented and returned its ads to other IDG publications. But the ban has stayed in place for *Computerworld*. Oracle probably hoped the punishment of lost ad dollars would shut us up and show us who's got the power. Well, we believe our readers have the real power.

To prove that, we commissioned our own exclusive survey of 355 customers from all the big database vendors. The results showed what you told us all along: Oracle's products are good, but its pricing was way out of whack.

We're grateful for all your help with our Oracle pricing stories. While it hurt our business side, it felt great on our editorial side. It felt like the power of you. ◗



PIMM FOX

Senate Shift Bodes Well for IT Policy

INFORMATION TECHNOLOGY folks should send a big thank you to Sen. James Jeffords for defecting from the GOP. With the Democrats now running the Senate, privacy legislation has a good chance of being enacted this year. Also, a potentially costly and bad-for-competition revamp of the 1996 Telecommunications Reform Act looks less likely.



Pimm Fox is *Computerworld*'s West Coast bureau chief. Contact him at pimm_fox@computerworld.com.

First, Ernest "Fritz" Hollings (D-S.C.) takes over as head of the Commerce Committee, the panel charged with considering privacy legislation. The Association for Competitive Technology (ACT), a lobbying group backed by Microsoft, Hewlett-Packard and IBM, has been fighting privacy legislation, claiming that it would cost U.S. businesses between $9 billion and $36 billion per year. But with the change in the Senate, "it is going to be more difficult for the ACT to make its case that privacy legislation will hurt businesses because of added costs," says John C. McCarthy at Forrester Research in Cambridge, Mass. Hollings will want independent corroboration of those figures before tossing proposed privacy laws overboard. Indeed, Hollings will be more amenable to addressing this issue because "he is less enamored with the argument that every piece of legislation kills business," says McCarthy.

As for rewriting the 1996 Telco Act to make it possible for the Baby Bells to get into the long-distance data market, Rep. W.J. "Billy" Tauzin (R-La.), who chairs the House Commerce Committee, will have to compromise on his plan. He wants to erase rules that force the Bells to prove that their local phone markets are competitive before they can get the green light to sell data services to businesses. Such a move would cut the number of data service providers, and alternative service providers such as AT&T and AOL contend that would let Bells use their clout to raise prices and drive competitors out of business.

If Tauzin wants to get his new legislation

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through Hollings' committee, the Bells won't get the waivers they want. In fact, Hollings has a historical antipathy toward the Baby Bells, making Tauzin's reform that much more difficult to sell.

The good news for IT — and consumers — is that finally, we'll have federal online privacy rules. This will help generate more online commerce; a Forrester study says $12 billion went unspent last year because people were wary of what could happen to personal information given online. And removing doubts about the intent of the 1996 Telco Act will mean more competition in the long-distance data market, hold the Bells to an already agreed-to opening of local phone markets and ensure better prices for everyone connecting to the Internet. ◗

DAVID MOSCHELLA

Past May Dictate Palm's Next Move

WHAT DO THE IBM AS/400, the Apple Macintosh and America Online have in common? Beyond the prominent use of the letter *A*, each offering has been a strong market leader during its respective computer industry era — minicomputers, PCs and the Internet. But the bond runs much deeper than that. All three companies implemented a vertically integrated strategy, delivering a bundled product that users found unusually easy to use.

This approach placed all three companies directly against the grain of their times. No other major minicomputer vendor matched IBM's bundled integration of hardware, operating system and database features. Similarly, Apple tightly integrated its hardware, operating system and user interface, all of which were separate products in the mainstream PC business. Finally, AOL successfully integrated ISP-style Net access with a variety of content services, providing a uniquely integrated Web experience.



DAVID MOSCHELLA is vice president of knowledge strategy at MeansBusiness Inc., a Boston-based company that's building a database of ideas. Contact him at [illegible]

This recurring theme in IT industry history recently came back to me as Palm Inc. executives deliberated whether to separate their company's hardware and software businesses. Like other vertically integrated market leaders before it, Palm is now facing what I call the "integrator's dilemma," an especially intractable version of author and Harvard professor Clayton Christensen's much-heralded concept, The Innovator's Dilemma.

The integrator's dilemma stems from the fact that many technology markets have been launched using a vertically integrated business model. This is often the most direct way to get a new product or service to market, since one can assure initial product performance without requiring significant third-party support. The PalmPilot is the perfect embodiment of this approach, and it's not surprising that it was initially a better handheld device than those based on Microsoft's software.

The problem is that while vertical integration is often the most effective way to launch a new market, it's typically a poor way to expand it. Thus, Palm is facing many of the same challenges that Apple faced some 15 years ago. If Palm tries to license its software (as it has to Handspring, Sony and others), it would introduce unwieldy competitive conflicts between its partners' and its own hardware businesses. If it keeps its software in-house, it cuts itself off from an essential source of hardware refinement and innovation.

Few companies have escaped unscathed from this dilemma. PCs, minicomputers, servers, cell phones and VCRs were all initially produced with vertical integration but are now overwhelmingly produced through horizontal structures. Integrated products such as the AS/400 and the Macintosh have remained viable, but largely as niche offerings. AOL is still an important exception. However, the transition to a ubiquitous high-bandwidth consumer Internet (whenever it happens) could easily force significant changes in the way AOL manages its Internet access business.

The integrator's dilemma forces companies into an agonizing predicament. They can take the psychologically wrenching step of breaking up the integrated business model that made them successful. This almost guarantees high levels of customer confusion, lost revenues and bet-the-company levels of risk. Or they can stick with their proven integrated approach, with the knowledge that they will likely lose their early market leadership and that they'll have to settle for a possibly successful but substantially diminished niche position. Inevitably, most executives and shareholders find the latter the least painful path. In the face of Microsoft's relentless handheld software competition, Palm will likely do the same. ◗

READERS' LETTERS

Fair Dealing

DESPITE Joe Auer's old-style "I win/you lose" attitude toward negotiating with vendors, not all professional service providers adopt such an adversarial approach to working with clients ["Two Truths Behind Securing Better Deals," Business, June 4]. We start our negotiations asking for a fair price and don't have any margin for Joe's squeezing tactics. Instead of rewarding the hard-nosed approach, we believe all clients should get a good deal regardless of their skills at wringing out dollars.

Betty Pierce
Strategic business development manager
Pena Systems Inc.
Denver

Is Encryption Enough?

AH, ANOTHER lonely voice in the wilderness ["Encrypt Everything!" The Back Page, June 4]. People consider some things too sensitive to discuss over a wired telephone, but they'll freely discuss them in an unprotected e-mail sent over the Internet. But will matters improve much if one of us zealots convinces someone who knows nothing about security to download and install PGP Freeware? When he has to create a pass phrase, he'll still use his favorite animal or some other inane choice. On the other hand, it would be a step in the right direction, and incremental improvement is better than none at all.

Boyd D. Garrett Sr.
Consultant
Sterling, Va.

Opting for Dollars

PIMM FOX asks why people can't get legal privacy protection from large online corporations ["Online Privacy Should Be a Right, Not an Option," News Opinion, June 4]. It's been my experience that whenever you ask "why" about a corporation, the answer is always "money." Requiring opt-in marketing puts a roadblock between a company and a dollar. That's why companies will make it as hard as possible to opt out and will fight opt-in tooth and nail.

Phillip C. Reed
Network administration
Eviciti
Cincinnati

Bypassing Redmond

I AGREE with Dan Gillmor that IT made Microsoft a monopoly and now has to face the consequences ["Microsoft's New Spin on Simplicity," News Opinion, May 28]. But there are alternatives. I use Starbase 5.2, an open-source work-alike for Office 2000 from Sun Microsystems. I've had no trouble editing .doc files with it and then switching back to Word 97, which is the last version I purchased. Since Starbase is open source, there is a good selection of input and output filters, allowing for more than one productivity tool in an enterprise without havoc. I also installed Opera 5.11 and find it a very capable browser. It imported bookmarks from both Netscape and Microsoft browsers and can be configured to emulate either of them. If companies looked beyond the ends of their corporate noses, they could find alternatives that give them more control over their own destinies.

Ken Burgett
Consulting architect
IBM
Bonny Doon, Calif.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

DAN GILLMOR

Tide Seems to Be Turning Against UCITA Measure

ONCE IN A WHILE, the good guys can win, or at least keep the bad guys at bay. That seems to be happening with UCITA, the Uniform Computer Information Transactions Act, the law that mostly hasn't happened.

Yes, two states — Maryland and Virginia — have passed it. But in the rest of the country, common sense and fierce opposition halted UCITA before it could get started in state legislatures.

UCITA, you may recall, is a product of the National Conference of Commissioners of Uniform State Laws. Normally, the commissioners team up with The American Law Institute to draft laws that will be consistent in all states and take a sensible approacb to commerce. In this case, the law group withdrew from the process, citing UCITA's unbalanced nature. But the commission ignored those concerns and tried to persuade the states to move forward.



DAN GILLMOR is technology columnist at *The Mercury News* in San Jose. Contact him at dgillmor@sjmercury.com.

The pro-UCITA forces — major technology industry companies, in particular — keep claiming that UCITA would be an improvement for customers and sellers alike. And it's true that creating a nationwide standard for dealing with sales of computer hardware, software and services could, in theory, smooth commerce in the Information Age.

But that soothing notion comes apart in the light of day. Big businesses that buy IT gear and services realized, not a moment too soon, that the legislation was a disaster because it shifted power away from customers into the hands of the sellers. Uniform laws that whack customers aren't pro-commerce.

Other prominent opponents now include every major consumer-protection and library group, and federal and state consumer protection officials hate the act. Most recently, as *Computerworld* reported [Page One, June 11], the American Bar Association seems to be leaning toward formal opposition to UCITA.

Even though UCITA has made little progress, its supporters aren't about to give up. They're trying to pull various end runs.

Undaunted by the opposition of more tban two-dozen state attorneys general and other consumer-protection officials, they've been negotiating with the outgoing and incoming presidents of the National Association of Attorneys General, looking for amendments that could lead to passage of a bill that wouldn't be appreciably better. Other attorneys general are having none of it.

Remember, the rationale for UCITA was to have uniform state laws. Given the near-zero chance of all states passing it, the sensible approach would be to throw it out entirely and start again from scratch.

But UCITA's backers still seem to think they can prevail. They have immensely deep pockets and a long-term view. They can afford to wait, and tbey won't stop trying.

IT and other big customers of the technology industry should also be lobbying — for a federal law that stops the UCITA power grab. The alternative may be a crazy quilt of state laws under which companies will be subject to industry predation in some states but not in others.

As networks continue to blur boundaries, the risk is that the laws in the several pro-UCITA states will rule companies elsewhere. That's not in the interest of IT or consumers. Unfortunately, this fight isn't over.

MICHAEL GARTENBERG

Don't Be Fooled By the Allure of 'Renting' Software

THERE'S A HOT NEW trend in the world of IT, a change in the way software is sold that's dramatic and alluring. But in the end, that change — to subscription services — will be bad news for IT departments.



MICHAEL GARTENBERG, former vice president and research area director at Gartner Inc., is a partner at Hudson Ventures, a New York-based venture capital firm. Contact him at mgartenberg@hudsonpt.com.

First, a bit of explanation. When software is purchased today, it's not the software code that's being purchased. You're actually buying a license that lets you run the software code. And that license is usually offered "as-is," meaning that no matter how poorly the software works, how buggy the code or whatever problems occur from your reliance on the product to work, it's *your* problem, not the developer's. Those license agreements are sold as "perpetual" licenses, which means you can use the software for as long as you wish.

As a result, the entire software industry is ruled by a simple notion: Keep the customer unhappy. The reason is simple: Customers who have perpetual license agreements need an incentive to buy new versions of essentially the same products and keep software vendors' revenues strong.

The first attempt to keep customers unhappy was to keep adding new features to products and providing incentive upgrades. Then there was Moore's Law, providing new horsepower to take advantage of new features so users would need to upgrade both hardware and software to keep current.

During the past few years, two things have happened. First, Moore's Law became less relevant as older hardware kept pace with software just fine. Second, users grew weary of dubious new features in their software. After all, there are only so many features a vendor can add to a product before the 80/20 rule kicks in.

In order to protect revenues, software vendors have begun to explore the notion of canceling the perpetual software license and moving to a license that would allow users to "rent" their applications for a fixed period of time. At the end of that period, users would have to renegotiate with their vendors and come to new terms.

There are a few good reasons for you to consider perpetual licenses. First, initial programs will be priced to sell, sort of like those music clubs that offer 10 CDs for a penny. Expect vendors to offer all sorts of upfront deals that will sound very attractive. In addition, they will point out the benefits these programs offer, such as cost predictability (for better planning and budgeting) and greater manageability for license agreements.

But what they won't tell you is that the downside is greater. Users will face a more limited choice of prodncts and find themselves subject to being locked in to a particular vendor. This type of agreement will also lead to shorter product cycles, since vendors will have the ability to drive users to more current products by charging more for using older versions under the guise that older products have greater support costs.

Users can also look forward to more meaningless product differentiation, and in the case of a very dominant vendor, a "rental," or subscription-based model, will rarely benefit the customer.

There's a big-stakes game going on now, and you're playing with all the software vendors out there that are testing these waters of nonperpetual licenses. It's time to call their bluff and respond with a resounding "No!"

And remember the old adage: If you're in a poker game and you don't know who the fool is . . . then the fool is you.

Don't play the subscription game.

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Our search for the year's top 100 IT leaders is under way again. Our third annual special supplement, which will be published in January 2002, will highlight business and technology people who have had a positive impact on their organization through technology. They foster ideas and creative work environments, envision innovative solutions to business challenges, and effectively manage and execute IT strategies.

We'd like you to be a part of our Premier 100 Nomination Panel and recommend successful IT leaders for consideration in this special issue.

www.computerworld.com/premier100nomination

Bill Gates

From: Bill Gates (Microsoft)
Sent: Thursday, June 14, 2001, 11:49 AM
To: Developer & IT Professionals
Subject: Microsoft .NET Today

What will the next generation of the Internet look like? Many of us envision an online world where constellations of PCs, servers, smart devices and Internet-based services can collaborate seamlessly. Businesses will be able to share data, integrate their processes, and join forces to offer customized, comprehensive solutions to their customers. And the information you or your business need will be available wherever you are—whatever computing device, platform or application you are using.

That vision has yet to be achieved. In many respects, today's Internet still mirrors the old mainframe world. It's a server-centric computing model, with the browser playing the role of dumb terminal. Much of the information your business needs is locked up in centralized databases, served up a page at a time to individual users. Worse, Web pages are simply a "picture" of the data, not the data itself, forcing many developers back to "screen scraping" to acquire information. And integrating that underlying data with your business's existing systems—never mind those of your partners—is a costly and frustrating challenge.

Compounding this frustration is the fact that today's standalone applications and Web sites create islands of functionality and data. You have to navigate manually between Web sites, devices and applications, logging in each time and rarely being able to carry data with you. You have to keep constant track of which particular application or device or Web site gives you which level of access to which particular data. Tasks that ought to be simple—such as arranging a meeting with colleagues from partner companies and automatically updating every attendee's calendar—are a nightmare. Productivity is one of the main casualties.

Solving such problems is the key challenge for the next generation of the Internet. At the heart of the solution is eXtensible Markup Language, or XML. An open industry standard managed by the World Wide Web Consortium, XML enables developers to describe data being exchanged between PCs, smart devices, applications and Web sites. Because XML separates the underlying data from how that data is displayed, the data itself is "unlocked" so that it can easily be organized, programmed, edited and exchanged between any Web sites, applications and devices. XML is a lingua franca for the Internet age. Just as the Web revolutionized how users talk to applications, XML transforms how applications talk to each other.

As developers become more familiar with XML, they are moving beyond simply using it for data. With the help of XML-based technologies such as SOAP (which enables applications to interoperate via standard Internet protocols) and UDDI (which gives businesses a standard way to describe their services and connect automatically), they are creating a new type of software that uses XML to provide Web-based services. These XML Web services are programmable and reusable, much like component software, except that they are accessible anywhere via the Internet. Programs using this model will run across multiple Web sites, drawing on information and services from each of them, and combining and delivering them in customized form to any device.

How will businesses and their customers benefit from this? Because XML Web services break down the distinctions between the Internet, standalone applications and computing devices of every kind, they enable businesses to collaborate to offer an unprecedented range of integrated and customized solutions—solutions that enable their customers to act on information any time, any place and on any device.

The power of the XML Web services model is amazing. A company offering an online electronic-payment service can expose its service to partners, so that they can deliver it as part of their own offering—regardless of what platform they are using. An airline can link its online reservation system to that of a car rental partner, so travelers can book a car at the same time they book a flight. An online auction company can notify bidders when they are outbid or have won an auction, or could partner with other firms to offer alternative shipping, fulfillment or payment options. XML Web services help your business break free of its boundaries.

With XML Web services gaining momentum among developers as the next generation of Internet-based computing, it's time to deliver a platform that makes it simpler to build these solutions and provides a reliable framework for integration and interoperability. Such a platform must be based on open standards, so it can work across all programming languages, operating systems and applications. And it must combine the power of PCs and smart devices with the richness of the Internet.

Microsoft's platform for building, deploying, operating and integrating XML Web services is .NET. In the next few pages we'll describe .NET, explain its many benefits, and set out a roadmap for transforming your business to take advantage of everything it has to offer.

Bill Gates

Chairman and Chief Software Architect

A Revolution Is Upon Us. Revolutions are a way of life in the computer industry. Only 20 years ago, the world was still in the mainframe era. Few people had access to or used computers, and when they did, it was only through the nearest IT department. The PC, the graphical user interface, and the introduction of the Internet changed all that. They democratized computing for hundreds of millions of people and transformed the computer into a mass-market product.

Since then, standards such as HTML and HTTP have exponentially increased people's use of the Internet. This base protocol for viewing content on the Web (and the associated software for "browsing" this content) grew Web usage to what it is today—a key activity in the daily lives of business employees and consumers.

As a result of the changes in how businesses and consumers use the Web, the industry is converging on a new computing model that enables a standard way of building applications and processes to connect and exchange information over the Web. This new Internet-based integration methodology, called "XML Web services," enables applications, machines, and business processes to work together in a way never previously possible. The widespread support around XML within the developer community assures that businesses will thrive and cooperate in the accelerated, Internet-based economy with this XML Web services model.

The first principle of XML Web services is that systems connect through the Internet—a safe assumption given the high availability and low-cost connectivity provided by the Internet. Second, there needs to be a simple way to "find" services on the Internet with which businesses can work. UDDI (Universal Description, Discovery, and Integration - www.uddi.org) is a broad industry effort, involving companies such as Microsoft, Ariba, COMPAQ, Dell, HP, IBM, SAP, and many others, which provides a way to locate and understand services provided by other companies. It's a kind of "yellow pages" on the Internet for the industry.

Third, a common language is needed to ensure that information is shared with others. XML is the ingredient that makes this possible. XML provides a common data format so that you can continue to work with data and information in a way that doesn't require business partners or customers to use a particular programming language, application, or operating system to interact with your systems. The final principle is that there must be a way to actually conduct business—for example, to call the service, book the appointment, order the part, or deliver the information—through a common protocol. This protocol is called SOAP (Simple Object Access Protocol). It enables systems to talk to one another and make requests. SOAP is the new model for Internet native integration.

These four principles enable you to connect, find, transform, and transact across systems, applications, and processes to deliver XML Web services. XML Web services are flexible technologies that bind disparate systems across different languages, unifying personal computing, enterprise computing, and the Web. As long as the fundamental communication occurs via XML Web services, each system can be independent from the others, with each "service" running on entirely different systems, even in different parts of the world.

The benefits of XML Web services are far ranging and will be instrumental in propelling explosive business growth over the next few years. Businesses will be able to:

Easily integrate with other businesses using XML Web services. Your software will easily integrate with other pieces of software—from the desktop to the mainframe—both within your enterprise and at external sites. These integration capabilities enable you to forge closer ties with business partners and pursue best-of-breed integration of business processes.

Develop applications faster. As the pool of XML Web services grows, developers will be delivering more and more software and services, including legacy applications, that operate within the XML Web services programming model. If there is existing code that can help you solve your problem, you can find it and integrate with it through XML Web services, instead of reinventing it.

Easily implement personalization. Integration with external data sources is part of the XML Web services programming model. This makes it possible for you to request information and transform data by whatever means necessary to deliver individualized software and services. Your maintenance burden is reduced because you no longer have to collect and maintain this information on an application-by-application basis.

A New User Experience. Employing XML Web services provides benefits for both consumers and businesses.

Consumers will enjoy unparalleled ease of use when they use applications built with XML Web services. Because XML Web services link applications, services, and devices together as connected solutions, software arrives as part of an integrated experience that offers simplicity in computing. XML Web services give users the ability to act on information any time, any place, from any smart device.

DOLLAR MARKET FACT

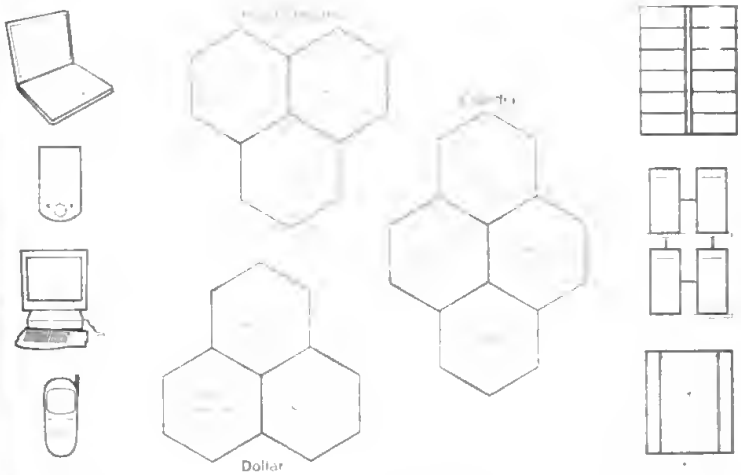
In two weeks, programmers built, tested, and deployed a Microsoft solution that translates reservation requests and data between Dollar Rent A Car's VMS-based reservation systems and an airline partner's UNIX servers. Because XML Web services powered the solution, Dollar can reuse that same integration model to link with any number of partners.

For businesses, implementing software projects using XML Web services solves many of today's supply-chain and demand-chain integration challenges. With its industry standard communication interfaces, an XML Web service is a simple, reliable way to blend existing systems with new applications and services.

Microsoft .NET—An XML Web Services Platform

With the momentum behind XML Web services growing among developers, Microsoft is building a platform to help them write, deploy, and manage these services. Microsoft® .NET is that platform. It contains both products and services developers need to build and run XML Web services, and enables some of the User Experiences that demonstrate the integration of XML Web services with the universe of computers, smart devices, and Web-based services used by consumers.

Microsoft .NET is optimized for XML and XML Web services, but it is by no means the only choice of



CLIENTS XML WEB SERVICES SERVERS

XML Web services can be leveraged in endless combinations to create User Experiences.

development platform. Because XML is an open standard, created and managed by the World Wide Web Consortium with the input of many computer industry companies, the products and services within Microsoft .NET will interoperate with a broad set of XML- and XML Web services–enabled infrastructure and developer tools from other vendors. With over 5 million developers skilled on Microsoft technology, the development community is poised to begin mass delivery of XML Web services.

MICROSOFT .NET PRODUCTS AND SERVICES

Developer tools and technologies. A productive set of tools is critical to developer success on a new platform like .NET. Visual Studio.NET and the Microsoft .NET Framework supply a complete solution for building, deploying, and running XML Web services. They help you maximize the performance, reliability, and security of your XML Web services.

Visual Studio.NET is the next generation of Microsoft's popular multi-language development tool, built especially for .NET. Visual Studio.NET helps developers quickly build XML Web services and applications that scale easily, using the language of their choice. Visual Studio.NET advances the following high-productivity programming languages: Visual Basic®, which includes new object-oriented programming features; Visual C++®, which advances Windows®-based development and enables you to build .NET applications; and C#, which brings RAD to the C and C++ developer. In addition to these languages provided by Microsoft, there will be over 20 languages provided by partners, including Perl, Python, Cobol, and Eiffel, from which developers can choose.

EXPEDIA MARKET FACT

XML Web services will help Expedia.com® transform itineraries into communication centers—allowing travelers to pick distinct notification settings for different members of their integrated contact list. By providing customers with relevant and timely information at their convenience, Expedia will continue to attract new customers and further strengthen the loyalty of their existing customer base.

The .NET Framework is a high-productivity, standards-based, multi-language application execution environment that handles essential plumbing chores and eases deployment. It provides an application execution environment that manages memory, addresses versioning issues, and improves the reliability, scalability, and security of your application. The .NET Framework consists of several parts, including the Common Language Runtime, a rich set of class libraries for building XML Web services, and ASP.NET, the next generation of Active Server Pages.

Server infrastructure. XML Web services should be built on a next-generation infrastructure that offers developers the benefits of modular architecture, economical and linear scaling, security, reliability, manageability, and high availability. The .NET Enterprise Servers and the Windows 2000 Server family make up the Microsoft .NET server infrastructure for deploying, managing, and orchestrating XML Web services. Designed with mission-critical performance in mind, they provide enterprises with the agility they need to integrate their systems, applications, and partners through XML Web services, and the flexibility to adapt to changing business requirements.

The Windows 2000 Server family is Microsoft's secure, scalable foundation for running the .NET Enterprise Servers and the next generation of business applications.

The .NET Enterprise Servers are:

- **Application Center 2000** to deploy and manage highly available and scalable Web applications;
- **BizTalk™ Server 2000** to build XML-based business processes across applications and organizations;
- **Commerce Server 2000** for quickly building scalable e-commerce solutions;
- **Content Management Server 2001** to manage content for dynamic e-business Web sites;
- **Exchange 2000 Server** to enable messaging and collaboration, anytime, anywhere;
- **Host Integration Server 2000** for bridging data and applications on legacy systems;
- **Internet Security and Acceleration Server 2000** for secure, fast Internet connectivity;
- **Mobile Information 2001 Server** to enable application support by mobile devices like cell phones;
- **SharePoint™ Portal Server 2001** to find, share, and publish business information; and
- **SQL Server™ 2000** to store, retrieve, and analyze structured XML data.

Services. An XML Web services model offers developers an opportunity to achieve economies of scale by utilizing a set of core XML Web services that releases developers from the burden of building everything themselves. By integrating with these core services to perform routine tasks, developers can concentrate on building high-value, business-critical XML Web services. Microsoft Passport is the first such service, providing authentication services for over 160 million accounts. Microsoft and many other companies plan to develop more core services for users and enterprises.

Clients. Microsoft will support XML Web services across the full range of smart clients so that your customers can access your XML Web services regardless of location or type of device. Some of the clients Microsoft offers include Windows CE, Windows Embedded, Windows 2000, and the upcoming Windows XP. These clients will power PCs, laptops, workstations, smart phones, handheld computers, Tablet PCs, Xbox™ game consoles, and many other smart devices.

XML-Enabled Products & Services

				FUTURE
PCs AND SMART DEVICES	Client Operating Systems	Windows 2000 Professional Windows CE	Windows Me	Windows XP Professional Windows XP Home Edition Windows XP Embedded Windows CE "Talisker"
	Smart Devices	Pocket PC	Mobile Explorer™	Xbox Tablet PC Smart phone code-named "Stinger" UltimateTV®
WEB SERVICES	User Experiences	MSN Explorer Office XP	Visio® 2002	Next version of Office Next version of Microsoft Project Next version of Visio
	Building Block Services	Passport		"HailStorm" Services
	Developer Tools	Visual Studio 6.0 SOAP Toolkit 2.0	Visual Studio.NET Beta 2 .NET Framework Beta 2	Visual Studio.NET .NET Framework .NET Compact Framework
INFRASTRUCTURE	Servers	Windows 2000 Server Windows 2000 Advanced Server Windows 2000 Datacenter Server SQL Server 2000 Exchange 2000 Server Commerce Server 2000 Host Integration Server 2000	ISA Server 2000 BizTalk Server 2000 Application Center 2000 SharePoint Portal Server 2001 Mobile Information 2001 Server Content Management Server 2001	Next version of Windows code-named "Whistler" Server family Next version of SQL Server code-named "Yukon"

User Experiences. A good User Experience pulls together all of the XML Web services and client software a particular user needs, and presents everything to the user in an integrated way that makes sense—even if it calls on XML Web services run by other companies on other machines. Microsoft will deliver User Experiences for knowledge workers, consumers, enterprises, small businesses, and developers. Some of the products that Microsoft is transitioning into User Experiences are Microsoft Office, MSN®, bCentral™, and Visual Studio.NET.

YOUR PATH TO XML WEB SERVICES

Microsoft is delivering the product line to put your business on the path to XML Web services today:

- **Windows 2000 Server**—the reliable infrastructure for the linear, cost-effective scaling required by the XML Web services world.
- **The .NET Enterprise Servers**—the foundation for running, managing, and securing XML Web services.
- **XML Web services**—Passport.
- **XML Web service–capable clients**—Windows 2000, Windows Me, Windows CE, Office XP, and soon Windows XP.
- **Developer tools and technologies**—the latest version of the Microsoft SOAP Toolkit for XML Web services and betas of Visual Studio.NET.

Leading-edge IT organizations, like **Dollar Rent-A-Car**, **Expedia.com**, and others, use these products today to build high-value XML Web services that solve today's integration and interoperability problems. For example, when CheckSpace offered its electronic payment processing capabilities through an XML Web service, it expanded its market reach to new small-business customers, resellers, and online marketplaces that used a variety of computer systems and accounting packages. Those new customers now enjoy streamlined accounting processes and more efficient cash-flow management.

FIVE EASY STEPS

Now is the time to prepare your company to take advantage of XML Web services. Five easy steps lead to the future:

1. Educate yourself and your IT department about XML Web services and Microsoft .NET.
2. Investigate Windows 2000, Office XP, and the Microsoft .NET Enterprise Servers as a way to upgrade the XML capabilities of your systems and infrastructure.
3. Download and evaluate betas of Microsoft's developer tools.
4. Create pilot projects that test XML Web services, and
5. Insist that your vendors have a roadmap for making their applications accessible as XML Web services.

A subscription to **MSDN® Universal** delivers the developer tools and servers you need to learn about .NET. Microsoft also offers .NET Readiness Training, which teaches the technical foundation for creating XML Web services and instructs you on using tools like C# and Visual Studio.NET.

Get started and learn more. For more information about XML Web services and Microsoft .NET, visit **microsoft.com/net**

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BUSINESS

NEW DIRECTIONS

This month, Gartner announced a new service geared toward helping business strategists use technology to manage their companies' growth. Branching into competitive analysis is a bold move, but some question the timing. ▸ 34

CHANGING ATTITUDES

Some long-standing behaviors, attitudes and beliefs can stop or slow down efforts to build a new IT infrastructure. Jim Champy spells out three "legacy behaviors" to watch out for and offers advice on how to handle them. ▸ 36

TOP FIRMS FOR TRAINING

Companies like Home Depot and PricewaterhouseCoopers don't just offer training to their IT employees, they build it into their jobs. This way, training is something that employees are held accountable for when it comes time for performance reviews. ▸ 38

SEEKING INSPIRATION

When Edward Jackson set out to devise a plan to integrate multiple systems for a major client, he strapped on his running shoes, went for a 13-mile jog, then came back and cranked out a 36-page document. Like Jackson, many IT leaders say they get their best ideas for work outside of the office. ▸ 44



MARK LUNDSTEDT

SHARING IT'S HOTTEST PROJECTS

AT WEST GROUP, which provides legal information online, IT employees get to work on leading-edge projects that keep them on their toes. At all of *Computerworld*'s Top 10 Best Places to Work for hot projects, technology drives the business, which means there are plenty of opportunities for people to hop from one exciting IT project to the next. 42

Gartner Targeting Business Strategists With New Offering

Tries to expand revenues of IT consulting by giving customers advice on business

BY JULEKHA DASH

Earlier this month, Gartner Inc. ventured outside its traditional niche of IT expertise by launching a new service to help business strategists use technology to manage their companies' growth.

It's a risky move, said some observers. Although the new service from the Stamford, Conn.-based firm could attract users interested in competitive analysis, many observers warn that the market for consulting and research services is tight because companies are trying to decrease spending in today's sour economy.

"We're seeing the coovergence of two markets: strategy advice and [technology] consulting," said Aldman Cushman, vice president of researcb at Kennedy Information LLC in Fitzwilliam, N.H. While traditional management consulting firms have branched out into IT, Gartner is doing the opposite — putting a business spin on its IT services, he said.

Dubbed GartnerG2, the new offering includes services to help clieots build market share, adapt technology to meet changes in the business eovironment and identify business models that will drive growth.

About 140 analysts, or one-fifth of Gartner's 700 analysts, will focus oo the new service. They will work oo cross-functional teams in the U.S., Asia, Australia and Europe.

Cushman called Gartner's move a way to grow revenue after "not posting growth numbers that have wowed investors." In April, Gartner announced a second-quarter loss of $1.4 million, which included the sale of investments.

The new service looks attractive to Kurt Jacobs, director of marketing and product development at Sphere Communications Inc. in Lake Bluff, Ill. He is currently talking to Gartner about subscribing to its new service. Unlike most researcb firms, whicb assign one analyst to a client, GartnerG2 gives users access to a variety of experts on an ad hoc basis, Jacobs said.

He said he thinks GartnerG2 could "identify opportunities where we'd he able to transform our business."

But the service may not be appropriate for everyooe.

"Gartner's brand is still built on IT-related services," which may make it difficult to reach business users, said Scott Cebula, vice president of information services at Memorial-Care in Long Beach, Calif.

"In many industries, IT and business strategy are like second cousins," he said. "Relations are friendly, but a bit distant."

New Avenue

Highlights of Gartner's G2 offering:

- About 140 analysts, or one-fifth of the company's 700 analysts, will focus on the new service.
- GartnerG2 analysts will work on cross-functional teams in the U.S., Asia, Australia and Europe.
- Gartner plans to advertise the service widely in Octoher, though it's available now at www.GartnerG2.com.

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ERIC J. SINROD/E-LEGAL

A New Property Fight

INTELLECTUAL PROPERTY is often the crown jewel of a company. Yet that jewel can be misappropriated more easily than ever in the Internet age. And domain names, which can serve as both Web addresses and brand names, are a form of intellectual property that's especially hot these days, according to a recent survey by Net Searchers International, a dnmain name registrar that also sells products and services designed to help manage domain names.

Of 4,000 intellectual property specialists in the U.S. and Europe who were surveyed, 90% said they have experienced domain name infringement and are reporting increases in other types of online abuse.

The report says that copyright infringement involving apprnpriation of material by Web sites such as Napster has risen I05% during the past three years and counterfeiting of intellectual property such as popular brand names bas increased an astounding 1,650%.

As a result, 74% of survey respondents said they're "concerned" or "very concerned" about online infringement. Furthermore, 88% of respondents now spend more than 10 hours a week dealing with Internet intellectual property issues, and they expect to becnme even more involved with online brand protection.

And with new top-level domains such as .biz and .info coming down the pike, problems will likely be compounded as people vie to register names in these new domains that might infringe nn the trademarks of others.

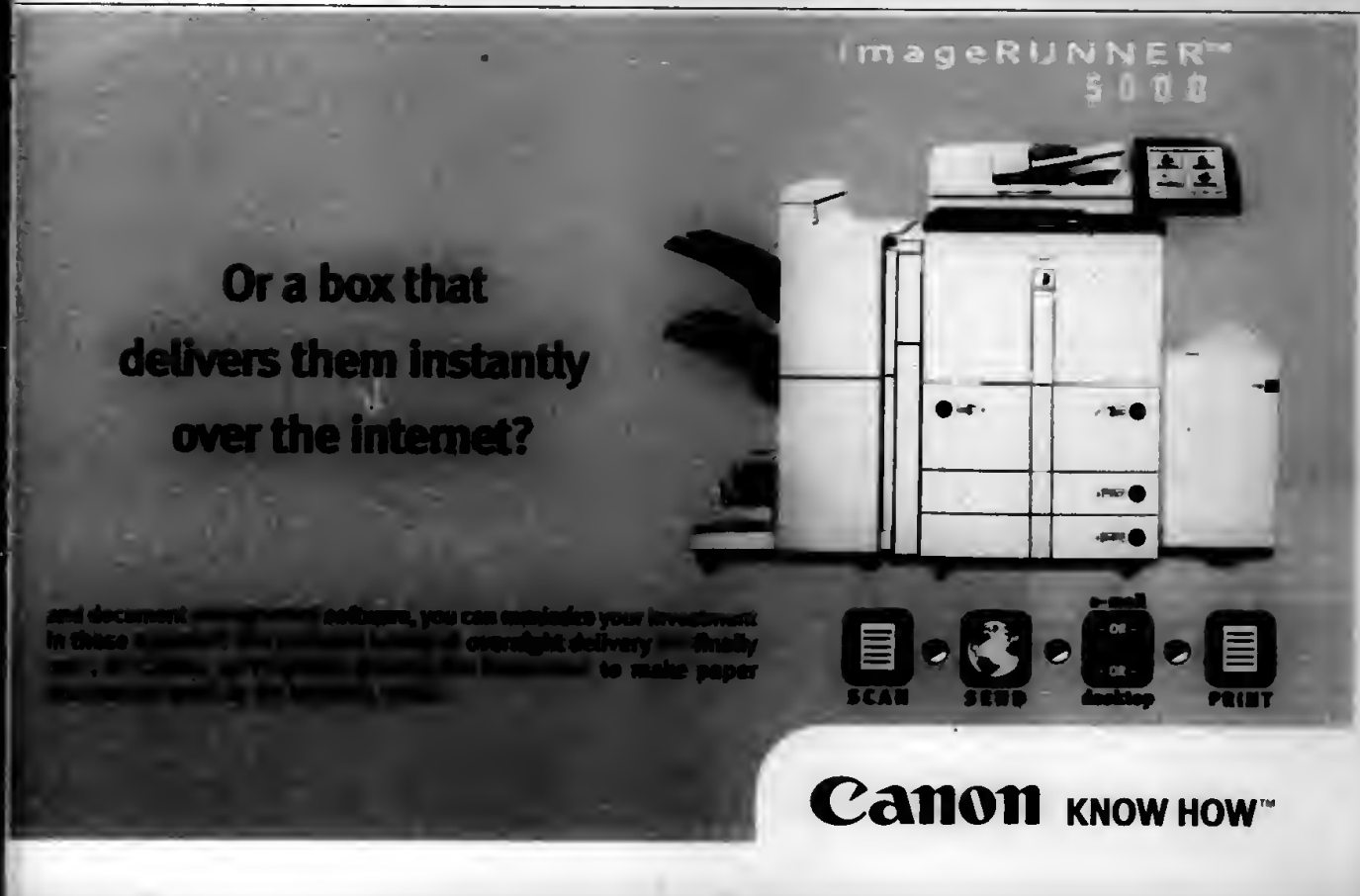
You plainly need to vigilantly protect your intellectual property. First, conduct legal audits to determine the true intellectual property that actually resides within your company. Then, take proactive steps to search for infringing activities and to ferret out infringing material. In the global economy, it's not enough to simply ascertain whether infringement is taking place close to home. You should launcb both national and international searches for intellectual property infringement.



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If you discover infringement, and negotiation doesn't cause the infringer to back down, you should initiate the necessary evil of legal action.

Yes, litigation is burdensome and costly. But if a company doesn't protect its intellectual property assets, it may be deemed to have forfeited any proprietary claim it has to its crown jewel.

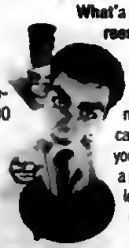


WORKSTYLES

Pushing IT, Science to Tech Limits

Interviewee: Ted Michaels acting CIO
Organization: Lawrence Livermore National Laboratory (LLNL), which was founded in 1952 as part of the national security effort. Its mission is to apply science and technology to the "grand challenge" science problems of our time, such as nuclear security and energy. The National Nuclear Security Administration's LLNL is managed by the University of California and the U.S. Department of Energy.
Main location: Livermore, Calif.
Number of IT employees: approximately 1,000
How does IT support for scientists differ from support for business? "In some ways, depending on the application, they are the same. That is, we need C++, Java and Web developers on both sides. But on the scientific side, we need people who can also do the mathematics and can understand the physics as well as do the programming and Web work. They have to be able to talk to the users to work out exactly the kind of systems and software they will need developed."
What are the biggest IT projects under way? "On the science side, it would have to be support for the National Ignition Facility. We'll have 192 lasers working in concert there [to simulate a nuclear explosion]. There is a tremendous need for control systems, database administration and modeling applications. We also have the Accelerated Strategic Computing Initiative. It involves the siting of a 12-teraFLOPS computing environment as well as the development of modeling and simulation software.

"On the business side, we are rolling out an intranet portal, scheduled for Oct. 1 availability. Something like My LLNL, where lab workers can get all their applications and Internet information in one place. We're also updating our Oracle financials and PeopleSoft applications."
What kind of training do LLNL IT workers get? "It depends on need. Right now, we are training for Windows 2000 rollout. But we also have a significant Macintosh user community, so we are preparing for Mac OS X as well. And Linux training is becoming important because its use is growing at the lab."
What's the typical IT career path at LLNL?



What It's Like To Work at...

"We have a two-track career ladder – technical and people management. Technical development means you can grow to become a project or program leader, but you don't necessarily have administrative people-management responsibilities. Because we have a matrix-management system here, where people move from project to project as needed, we need skilled people managers who can manage individuals in that kind of environment."
How do you review IT staff? "Every person gets a written annual performance appraisal. In most cases, a career development plan is discussed."
Do you offer bonuses? "No. We have an annual merit review system. We do have special awards, though, that can run up to $1,000. But that's only for extraordinary effort, and it's a one-time award."
Is there a dress code? "Anything from coat and tie to shorts and sandals. Once you get past the security aspects of the job, this is a pretty open environment, much like a college campus, filled with the brightest people in the world."
Would IT staff members feel comfortable e-mailing Bruce Tarter, LLNL's director? [laughter] "Oh, yes, they would. They would, indeed. . . . That happens a lot."

– *Mark Hall*

JIM CHAMPY

The *Other* Legacies

MANY IT AND LINE MANAGERS continue to wrestle with legacy systems that were built 10 or 20 years ago. As everyone knows, these systems can't do the job forever, but somehow they keep going. Companies with old IT infrastructures have to face reality: Someday, those systems won't be able to do what their businesses require.

The issue is becoming more acute as companies develop improved business processes that require Internet-based technologies that must connect to these vintage systems. When Internet-based service models break down, it's often because old processes and systems can't support a new way of doing business. Anyone who has tried to sell products over the Internet has learned this. Connecting an electronic ordering capability to an old order-fulfillment system is like putting a jet engine on a Chevy.

Companies are spending millions to fix the problem. But those problems may never get fixed, and lots of management time will be wasted trying, unless IT and business managers take on some other legacies, namely those that are euphemistically called the "organizational artifacts" of a company — the behaviors, values and beliefs that often impede the implementation of effective business and technology changes.

Such behaviors and beliefs may cause you personal frustration. But worse, they can stop or slow a company from what it must do: build a new Internet-based IT infrastructure.

Here are a few common artifacts to look for. If you spot them and understand how harmful they are, maybe you can manage them away or manage around them.

■ *"If it ain't broke, don't fix it."*

This may be the most common response to change today. It makes a manager appear smart. Why should you spend time and money if there's nothing visibly wrong with what you're doing? This is a ticket to complacency, the rationale for doing nothing.

Your systems may not be broken, but they may not be adequate to take advantage of the business opportunities that are out there.

IT is finally positioned, with the help of the Internet, to drive a company's top line and dramatically improve efficiency. Investing in technology today isn't about fixing something. The new mantra must be "We can do it better and better and better."

■ *"Good idea. Let's put it through the budget process."*

The bigger a company, the more processes it usually has for controlling spending. In principle, there's nothing wrong with control and good spending discipline. But these processes often slow decision-making to a crawl and sometimes, in the name of "empowerment," push decision-making too far down, where decisions can become stuck amid bickering and foolish trade-offs.

No one may be audacious enough to make big technology decisions that will really improve company performance. Major IT investments — spending on a new infrastructure, for instance — are too important to push down into an organization or to subject to an overly bureaucratic process. These decisions must be the domain of executives, and executives need to know enough about how IT is affecting their industry to act.

■ *"Can someone tell me what value we get from IT before we spend any more?"*

This is a common executive request, given the technology spending binge of the past several years.

But be careful — it's a trick question. If you try to answer it in isolation, you won't satisfy anyone, since IT alone delivers no value.

The question must be rephrased in process terms. That is: "What value will this technology-enabled process create for the business or for our customers?" That question is worth answering and might accelerate an investment decision, rather than slow it down.

Don't get me wrong. Management discipline is important in making technology decisions. Just don't let old behaviors and beliefs shape the questions or answers.



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100 BEST PLACES TO WORK IN IT

MAKE TRAIN

The Best Places to Work in IT offer a full slate of training courses in technology, business and communication skills. To make sure IT pros take advantage of the courses, raises are tied to the training completed. By Leslie Goff

STEVE HITZFELDER, a technical fellow at insurance company USAA in San Antonio, is scheduled to take two formal classes during the next few months, one in Unix, the other in Windows 2000. His status as part of the company's technical elite depends on it.

"I've always been proactive about training, but now I have to be much more deliberate," says Hitzfelder, whose tenure at the company spans 26 years.

As a technical fellow, Hitzfelder is on par with USAA's IT executive management in terms of recognition, benefits and bonuses. With those privileges comes the responsibility of continuing his professional development and tying it to the company's objectives.

Taking specific classes is an integral part of Hitzfelder's yearly performance review at USAA; the company holds him accountable for maintaining top-notch technical skills.

Finding courses to take isn't difficult: USAA has a staff of 55 IT instructors and instructional designers and offers vendor-provided training on-site. The company also maintains a relationship with a local college to customize courses in new technologies.

USAA provides a number of alternative learning opportunities as well, such as benchmarking trips to other companies, a world-class lecture series featuring renowned IT experts and access to online courses via the corporate intranet. Training isn't an afterthought at USAA. It's part and parcel of its corporate culture.

"We have certain things to achieve by the end of each year, and we map into that the training people will need," says Steve Yates, president of USAA Information Technology Co. (ITCO), a wholly owned IT subsidiary of USAA. "Employees have to feel good about working here, and we need technical knowledge to deliver our products, so training is important to both employee satisfaction and getting the job done."

Tying Goals to Performance

Like USAA, the organizations that comprise *Computerworld*'s 10 Best Places to Work in IT for training tie training goals to employee reviews and performance measurement, recruiting, hiring and retention and day-to-day work. Training isn't left to chance at these companies: It's deeply rooted in the overall IT culture. That includes having formal processes to ensure that employees establish and meet specific training and development goals.

Many IT organizations give only lip service to training. They set aside the funds for it, but all too often, class attendance falls through the cracks as IT staffers try to complete training in addition to going through the daily grind. By linking training objectives to annual reviews and holding managers accountable, *Computerworld*'s 10 Best Places to Work in IT for training guarantee that their employees take advantage of available opportunities.

"You have to force [training] to happen," Yates says. "Everyone stays too busy except for the real self-starters, so you have to keep talking about it and enforce it in the management objectives. It doesn't come naturally."

USAA's IT managers are subject to the same level of accountability for training as individual staff members. To qualify for promotions and bonus-



es, managers must demonstrate that their direct reports have met their annual training goals. That ensures that USAA keeps up with the technical skills required to meet its business objectives, Yates says.

"We put training objectives at the departmental level, and then we dovetail those with management objectives," says Sally Grant, vice president of plans, programs and resource management at USAA ITCO, which spends $7,200 per IT employee eacb year oo training. "And that begins the dialogue of what will go into each employee's personal development program."

Similarly, Towers Perrin, a management consulting firm in New York, has a formal process for establishing annual training agreements between managers and direct reports.

During the first two months of the year, employees log into an online assessment center, where they rate themselves in eight areas of competency. Managers contribute their own online rating of each employee, and then the employee and manager get together to analyze the evaluation, explains Wayne Guymon, divisional CIO at Towers Perrin's outsourcing unit.

"At the end of that process, we have an agreement that defines areas of weakness and a plan for improvement," says Peter Jessel, managing director and CIO at Towers Perrin. Employees spend an average of 10 days per year in training oo those mutually agreed-upon areas.



The Needs of the Many

Key to creating buy-in for formal training agreemeots is balancing the needs of the organization with the personal aspirations of employees.

For example, at New York-based PricewaterhouseCoopers, IT employees work with a coach who analyzes how their personal goals match up against corporate requirements.

"Our business is driveo by having the right number of people with the right skills at the right time," explains Amy Wright, global leader of learning and professional development at the accounting firm's management consulting services divisioo in Edison, N.J.

One advantage of embedding training in the IT culture is that it increases a company's flexibility in recruiting and hiring. For example, at The Home Depot Inc. in Atlanta, recruiting and hiring are driveo by talent, not by skill sets, says CIO Ron Griffin.

With a strong training program that's tightly integrated with annual reviews, the company can focus on hiring IT professionals who have the highest aptitude and then train them on a project-by-project basis, instead of being forced to find people with specific technical skills.

The result of Home Depot's approach is that over time, the company gains depth and breadth in both technical and functional expertise.

The wide variety of training that the project-based approach offers also improves retention. Charlie Lump, a senior software engineer at Home Depot, says he originally moved to Atlanta to take a permanent position just long enough to transition his skill set from Cobol to object-oriented development. He then planned to eventually strike out on his own as a consultant.

But the richness of Home Depot's culture and training persuaded him to stay on board, Lump says.

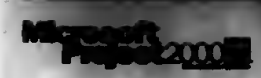
"Certainly, you can work hard, and have a job, and work on skills on your own time," he says. "But realistically, most people aren't that committed — I'm usually not. So my career has definitely been enhanced by the training partnership here."

Goff is a freelance writer in New York.

Top 10 *Best Places to Work in IT for training*

Rank				
1	The Home Depot Inc.	17	$9,200	Increase
	Nationwide Insurance Cos.	15	$7,852	Increase
3	The Vanguard Group Cos.	15	$8,000	Increase
	Forsythe Technology Inc.	15	$10,000	Remain the same
5	Avon Products Inc.	10	$11,000	Remain the same
	FleetBoston Financial Corp.	7	$9,200	Remain the same
7	Towers Perrin	10	$10,000	Remain the same
	PricewaterhouseCoopers	15	$7,907	Increase
9	Harrah's Entertainment Inc.	14	$7,000	Increase
	USAA	8	$7,200	Remain the same

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100 HOT PROJECTS

BEST PLACES TO WORK IN IT

HOT PROJEC

RICK DAUK SPEAKS the words that every employer wants to hear. "When I wake up, I'm excited to come to work. I can't wait to come in."

What creates such enthusiasm? A great paycheck, a comfortable chair, a gourmet cafeteria?

Those things are nice, of course. But for Dauk, it's the opportunity to work with leading-edge technologies on projects that really count.

"Every other day, they're starting a new initiative with groundbreaking technologies," he says. "There are opportunities all over the place to work on exciting stuff."

Dauk is a lead software engineer at Eagan, Minn.-based West Group, a provider of online legal information and one of *Computerworld*'s 10 Best Places to Work in IT for hot projects.

Like its Best Places peers, West Group considers technology to be its lifeblood and juggles many projects simultaneously. Most important, project hotbeds also encourage their employees to make lateral moves across the organization, allowing workers to pursue their own interests and explore many different technologies. At these companies, few people stay in the same job for more than two years.

With the slowing economy, technology workers are more interested than ever in sampling a variety of leading-edge projects to stay up-to-date, says Winn Stephenson, senior vice president of IT at FedEx Services, a division of FedEx Corp., which is on the 100 Best Places to Work in IT list. "There are fewer jobs, but the interest in learning has gone up," he says.

In Dauk's nine years at West Group, he has worked with five different project groups. His most recent project was enabling wireless users to access West Group's flagship product, Westlaw, via personal digital assistants (PDA). Westlaw is an online resource for legal professionals, consisting of 18,000 databases of legal documents, case law, statutes, news and citations.

"I knew the business unit was talking about doing it, so I made it known to my supervisor that I was interested," Dauk says.

That type of motivation combined with West Group encouraging lateral job moves and its system of posting available jobs and upcoming projects on its corporate intranet all add up to a dynamic learning environment. Managers facilitate career growth, but they don't micromanage project staffing.



MARK LUNDBERG



Leading-edge technology is what IT professionals really want. That's why the best employers make sure that everyone has access to the challenging assignments. By Mary Brandel

TS ALL AROUND

Steve Buege, West Group's senior vice president and chief technology officer, likens the company to a "large, mature and highly profitable dot-com. Our people hop from project to project like they go from company to company in Silicon Valley."

The difference is "we're not running on razor-thin margins," Buege says. "We reinvest a lot of money into new product development, which in our world translates to technology."

As a result, virtually everyone on staff gets the chance to work on a leading-edge project, Buege says. "There's not just one glamour project and the rest is grunt work," he says.

Scanning for Knowledge

Like Buege, Stephenson says that all 5,000 members of his IT staff at FedEx get involved in leading-edge technology projects. "Every IT project we have has some technology that we consider hot," Stephenson says.

In addition to posting all open jobs, FedEx encourages lateral moves and allows people to freely bid on projects in other areas of the company.

"Even though it's painful, we encourage it because it's the right thing to do," Stephenson says. The company also espouses a "lifelong learning" concept and provides tuition refunds and on-site training.

One major project under way at FedEx involving approximately 200 of its staff is the development of the next generation of the FedEx SuperTracker, the handheld package tracking device used by the firm's couriers.

When it rolls out next year, the PDA-size device will contain a strong-arm processor, a very large screen, 100MB of memory, a two-dimensional scanner and a Bluetooth-enabled short-range wireless radio — "all the combination of current technologies to make it a great device," claims Stephenson.

Thirty-four years ago when Nick D'Onofrio was a circuit designer at IBM, his picture appeared on an advertisement for his employer with the words, "IBM helps you stay technologically hot." "It was an amazing set of words," recalls D'Onofrio, now senior vice president of technology and manufacturing. "And I still think it's true."

Today, IBM employs 160,000 technical people worldwide in a company that's 320,000-strong. "It's a big, energized technical community," D'Onofrio says. "They don't sit around. They're here because they want to make a difference." IBM is also on the Top 10 list for hot projects.

IBM's list of hot projects runs the gamut of the company's business areas. But an overall focus is on pervasive computing, where billions of devices are networked together to enable an "everywhere, anywhere, always-connected type of thinking," D'Onofrio says.

Another key area is the services business, where a hot job title is IT architect, he explains. These people make sure everything the customer implements can be integrated with existing systems and can be extended for future systems. "These people are an incredible breed because they understand how this stuff works together," says D'Onofrio. ◗

Brandel is a freelance writer in Newton, Mass.

Top 10

Best Places to Work in IT for hot projects:

Rank	Company
1	FedEx Corp.
2	The Home Depot Inc.
3	The Vanguard Group Inc.
4	IBM
5	Sears, Roebuck and Co.
6	Charles Schwab & Co.
7	Electronic Data Systems Corp.
8	United Parcel Service Inc.
9	Acxiom Corp.
10	West Group

The most popular IT initiatives that were business-critical during the past 12 months at the top 10 companies:

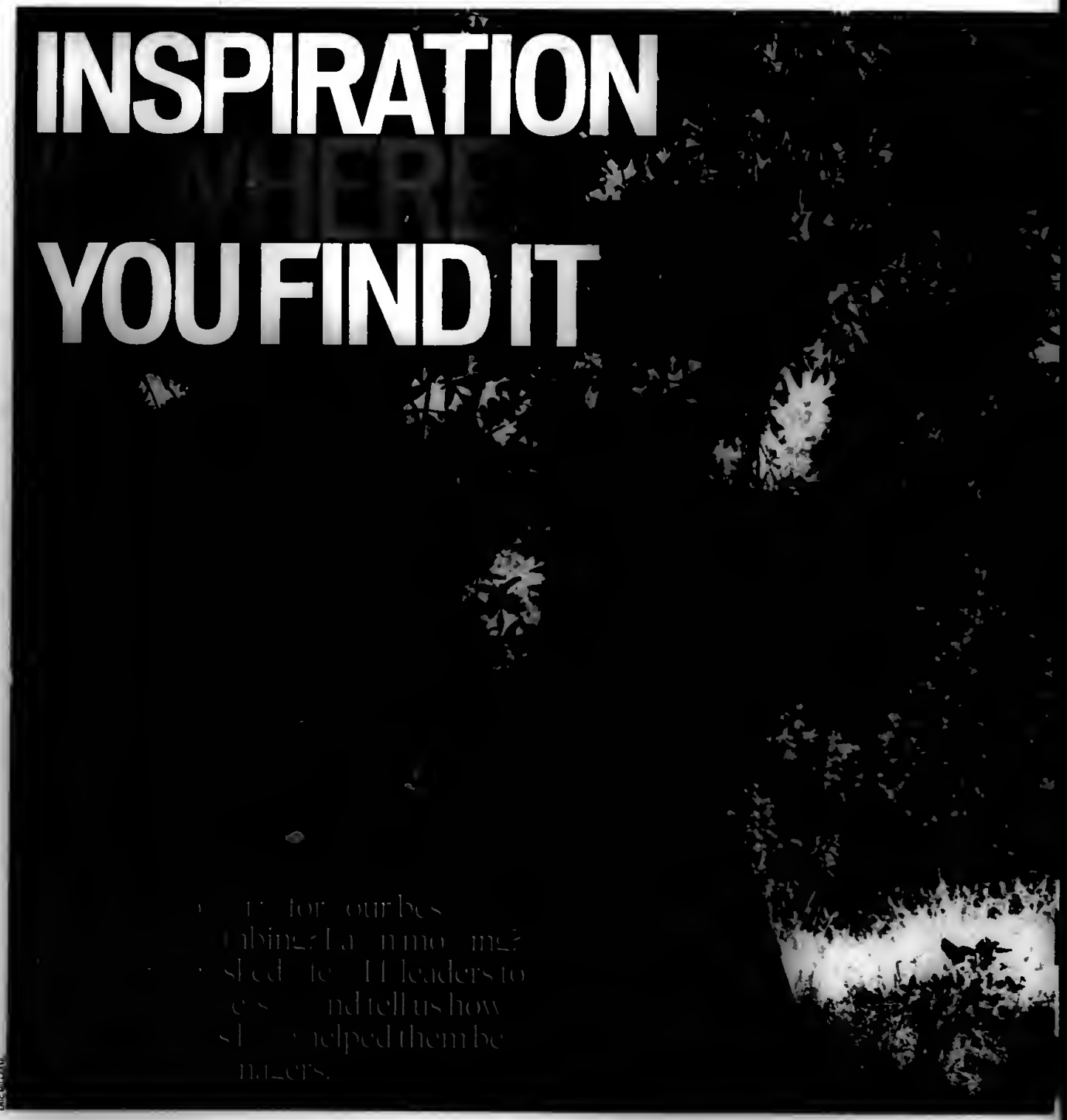
- Customer privacy
- Customer service/customer relationship management
- Data management/business intelligence
- E-business infrastructure/B2B/B2C
- E-business strategy
- Enterprise resource planning
- Security
- Web site development

The most popular IT initiatives that will be business-critical for the next 12 months at the top 10 companies:

- Customer service/customer relationship management
- E-business infrastructure/B2B/B2C
- Security
- Web site development
- Customer privacy
- Data management/business intelligence
- E-business strategy
- Enterprise resource planning
- Financial applications
- Global expansion
- Operating system rollout

INSPIRATION

YOU FIND IT



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WHEN PHIL SWIFT comes to the office with paint on his knuckles, his employees brace themselves.

In addition to serving as CIO at Esurance Inc., an online insurer in San Francisco, Swift is a painter (scenes depicting galleons and British naval ships are a specialty). He gets his best ideas when he takes his mind off work and focuses on his art.

One recent weekend, Swift was sketching at home, torn between conflicting requests. "My wife wants me to paint a portrait of our dogs; my son wants me to paint race cars on the walls of his [room]," he says.

Suddenly, Swift realized his personal dilemma paralleled one at work: In an effort to keep him happy, managers in his department were scattering resources among too many projects. They were trying to do cars and dogs at the same time. They needed to pick a priority.

Swift put down his charcoal and made some notes. The following Monday, he announced major changes. Most notably, he decided to reconfigure Esurance's architecture, "dropping the database away from the rest of the system," he says.

So, what inspires you? Where are you and what are you doing when you get your best ideas?

We asked IT leaders where they turn for inspiration. Not surprisingly, their answers were diverse. Some CIOs seek intense, risky challenges such as auto racing or mountain climbing; others prefer gardening, painting or distance running.

A common theme emerges, though, and is supported by experts on creativity and motivation: Inspiration is most likely to strike when the conscious mind is a thousand miles away. Moreover, IT's central role in the organization makes it critically important to achieve and harness inspiration. IT leaders, be they CIOs, programmers or help desk staff, are no longer viewed as back-room service providers; their creativity is both valued and demanded by the business.

Asked where most people get inspiration, John Putzier laughs and says, "Well, 99% of the time, it's not at work." Putzier, who is president of workplace consultancy FirStep Inc. in Prospect, Pa., and an author and speaker on workplace motivation and creativity, says the common denominator is that inspiration strikes "when you're not focused. That's when your subconscious is talking to you."

PHIL SWIFT, CIO at online insurer Esurance, says he gets his best ideas for work when he escapes into painting.

BURNING RUBBER

Jon Ricker manages to hear his subconscious over the satanic shriek of supercharged Hemi engines. Twenty years ago, Ricker was serious about drag racing — "as serious as I've ever been about anything," says the president and CIO of Limited Technology Services, the IT subsidiary that serves The Limited Inc., a Columbus, Ohio-based clothing retailer whose brands include Victoria's Secret.

Some of his old racing friends, including Don Prudhomme and Jeg Coughlin, have gone on to win championships — and earn millions of dollars.

Ricker gave up competitive drag racing many years ago (although just for kicks, he recently "hopped in a gas dragster and went 260," he casually reports). But the strategy, discipline and teamwork of big-league motor sports continue to inspire him. So much so that when the National Hot Rod Association held a major race in Columbus last June, Ricker secured admission for all 800 Limited Technology Services employees and their families.

"I made sure everybody had pit passes," he says. "I wanted them to see the [race teams] thrash between rounds, stripping the engines down to a bare block, reading the computer printout."

Ricker wanted his IT staff to see this high-pressure teamwork up close; he sees significant parallels between racing and IT. "In racing, you have specialists who are tops in their field; in IT, same thing — you've got Unix, Java, whatever," he says.

Ricker says the demands of drag racing represent "continuous improvement at its best — you're always realigning your resources." Several employees, including some with no interest in drag racing, later told him they were motivated by the field trip.

Can racing really serve as inspiration for IT pros? "Winners in every discipline have similar characteristics in how they deal with things," Ricker says. "It's all about team, all about strategy, all about being three-deep in strategies when the first one doesn't work."

Such flexibility has come in handy. The Limited had 24 IT groups and 24 CIOs when Ricker was hired to centralize the IT function in 1996. Ricker says contingency-planning strategies such as flexible systems inspired by race teams allowed him to complete the consolidation on schedule despite the continuing addition, consolidation and sell-off of various brands.

Walid Achi, CIO at CyBiz Inc., a Reston, Va.-based software company specializing in online procurement tools, is another racer, as well as a gardener. He insists the activities are surprisingly similar: "They're both all about tuning," he says. Each allows him to "snap out," as he puts it, setting aside work-related problems. "I'm completely focused," he says. "It puts me in a different state of mind."

Recently, Achi, who describes himself as a hands-on CIO and who gets those hands dirty modifying his BMW M Coupe, has been struggling to bring a knowledge management application to an intranet environment. The technical challenges are plentiful. "I'll go out, do some gardening or work on my car, and strangely enough, the solutions just flow," he says.

Clearly, inspiration is personal and difficult to throw a rope around. But experts say it's more important than ever for IT leaders to harness their creativity. "Traditionally, companies looked to IT to be an implementer, not a creator," says Jordan Ayan, founder of Create-It Inc. in Naperville, Ill., and author of *Aha! 10 Ways To Free Your Creative Spirit and Find Your Great Ideas* (Crown Publishing, 1997). "But in the age of technology, if you want to strengthen your role in the firm, you need to play the creative role."

DISTANCE TRAINING

Not all IT leaders risk their lives in search of inspiration. For Edward Jackson, the major risk is that one of his bosses will notice his late arrival at the office Monday morning. As chief technology officer at SkillsVillage Inc., a Sunnyvale, Calif.-based company that helps businesses hire and manage contract workers, Jackson works at an unrelenting pace common to employees at young companies.

But not on Monday mornings. Jackson saves that time for a 13-mile run, which is part of his training for his first marathon, which he will run this month in San Diego. "I run Monday morning no matter what," he says. "I'll carve a couple of hours out, get to the office at 11:30."

The Monday wake-up run is Jackson's last buffer before he attacks (and is attacked by) another jam-packed week. "I'll come in and have 22 voice mails and a couple hundred e-mails," he says. "But I've got a little buzz in my legs, I'm comfortable, I'm relaxed, I can handle it."

Jackson says solutions to technical and managerial problems often pop into his head while he runs. Recently, his IT team found itself enmeshed in a project in which the sales department had made grand promises to a client (a large East Coast bank he declines to name). The bank had a legacy general-ledger system, an Ariba Inc. order-management system and a third-party time-entry system, Jackson says.

"We had to integrate [with] and incorporate business rules from all these systems. My role was to detail how we would make that work," he says.

Stymied, Jackson sat down, wrote a few sentences, fiddled around, fetched a cup of coffee and generally procrastinated. "Then I broke away, did 13 miles, came back and pulled together a 36-page document," he says.

The run allowed him to organize his thoughts. "When running, your legs are flying, your heart is bursting, but there's such calm in your mind," says Jackson.

WHERE LIGHTNING STRIKES

Inspiration is fickle, but you can take steps to be ready for it. Author and consultant John Putzier says that when he gives seminars, the audience tells him they get most of their great ideas in these settings:

- In bed
- In the shower
- While running or exercising
- While gardening
- In the car

When the inspiration stick whacks you on the head, you need to optimize it. Here are tips from the experts:

- Be ready for it. Know and accept your own circadian rhythms; some people find inspiration only at 3 a.m., whether they like it or not.
- Capture it. If you fail to capture a great idea when it occurs, you stand to lose it for good. Use any means necessary to nail down your thoughts. "I worked with an engineer at Boeing who traveled extensively," says author Jordan Ayan. "He kept a bunch of preaddressed postcards in his pocket, wrote ideas down on them and sent them home to himself."

— Steve Ulfelder

Ulfelder is a freelance writer in Southboro, Mass. You can contact him at sulfelder@charter.net.

Dear Career Adviser:

I've been doing Web-based applications in Active Server Pages (ASP), Microsoft Transaction Server and SQL Version 7 for about two years. I've been learning Java Server Pages and servlets, but I have yet to develop an actual application. I know Linux and Apache. I developed *console and graphical user interface Java applications at my last job, where I wanted to do Web development. Now I want to do Java Server Pages and Enterprise JavaBeans development. Since I love music, I'd like to move into that world, if possible.*

— MISTER MUSIC

Dear Music:

A year ago, companies in the music space might have hired someone with high passion and scant experience. But in today's market, you couldn't put a résumé describing Active Server Pages and SQL experience in front of a client that's working on a streaming media player, says Beth Folmar, group manager at Scientific Placement Inc. in Austin, Texas. Too much good talent is available.

Getting hired into a music-related job requires far more than scripting languages. You should be able to write low-level applications in C. Or, depending on the facet of the music business you choose, you should have in-depth Linux and Apache skills, solid development experience with real languages such as Java and C++ and some experience with streaming audio, audio digital signal processing and MP3. Additionally, if you want to develop an application that allows consumers to swap music files, you'll need to know network protocols, including TCP/IP and HTTP.

If music opportunities still rock you, at least get to know Netscape or Explorer plug-ins, because both are generally done in higher-level languages, Folmar advises.

Browser vendors typically provide development tool kits on the Web, and you might generate some interest if your background includes C, C++ and significant experience with a development tool kit.

Dear Career Adviser:

I am a 50-year-old woman with almost 30 years of experience in IT. I have moved up through the ranks as a mainframe Cobol CICS programmer into programming management. When my employer merged into a corporate system, I assumed a liaison position between corporate IT and local users who needed resources. I don't supervise any employees.

My current position is being eliminated. I am technically quite strong. Should I take severance and seek another mainframe position or become an entry-level Web developer to gain additional skills?

— WANDA WEB WANNABE



FRAN QUITTEL is an expert in high-tech careers and recruitment. Send questions to her at www.computerworld.com/career_adviser.

Dear Wanda:

Mainframe technologies involve language and logic that aren't easily transferable to other areas, says Ellen Singer, director of human resources at Passlogix Inc., a New York City-based e-business software company. Consequently, your current problems revolve around not having upgraded your skills all along and now having to compete against people who have learned Web technologies in college and have one to two years of experience.

Pragmatically speaking, you'd be better off finding a position as a business analyst in an "older" industry that is slower to adapt to the newer technologies. This leverages your user communication and business skills. And it gives you some time to simultaneously implement a catch-up program that will move you into either client/server or Web-based work. You'll need either ASP, Visual Basic and SQL Server skills to qualify for a client/server job, or ASP, Visual Basic Script and JavaScript for a Web-based job.

Dear Career Adviser:

I'm a biomedical engineer by training and have been working for the past two years as an embedded-software and engineering-related software engineer using C and Unix at a medical devices company. I'm eager to move into new Web-related IT technologies such as C++, Java and XML. Would a firm give me on-the-fly training? What about opportunities that use my background?

— BOXED-IN BIO

Dear Bio:

Biotechnology and biotech computing form an oasis of hiring in an otherwise flat job market, but you're also competing with many laid-off dot-commers and other people who already have Web experience.

Your better career path would be to move from programming medical devices into management of their data output, says Berkeley, Calif.-based biotech consultant Mary Alice Yund.

"Medical devices all have internal processors which communicate with other instruments, and the data coming out must be handled," Yund says.

To learn about various up-and-coming laboratory information management systems applications and hiring in bioscience information systems, Yund advises checking out the Web sites *www.bio.com*, *www.biospace.com* and *http://bioview.com*. Other worthwhile sites include *http://news.bmn.com/hmsbeagle*, *www.bayareabioscience.org* and *http://recruit.sciencemag.org*. ▶

EXECUTIVE TRACK

Robin S. Hanna has been hired as CIO of deli chain Schlotzsky's Inc. in Austin, Texas. In this newly created position, Hanna is expected to equip company-owned deli locations with Internet access; improve the communications network to link 440 franchisees and 900 corporate employees worldwide; redesign the touch-screen, PC-based point-of-sale system; accelerate back-office software systems; and expand the deli's Web presence. From 1999 to 1998, Hanna was director of operations for notebook and advanced-desktop manufacturing in the Americas at Dell Computer Corp. Previously, she was part of the engineering team that developed IBM's first PC.

Cincinnati-based The Kroger Co. announced the promotion of William T. Boehm to group vice president of logistics. Boehm most recently served as vice president of logistics. In his new role, he will be responsible for the company's national distribution system, including facility planning and construction, capital management, supply chain technology and transportation. He will continue to report to Michael Heschel, the grocery chain's CIO.

Jeffrey Steinhorn has joined Clifton, N.J.-based retailer Linens 'n Things Inc. as its CIO, reporting to the CEO. He will replace Matt Meaney, who is retiring. Steinhorn is expected to evaluate and improve operations processes and efficiencies across business functions, as well as develop information systems to support the retailer's growth. Prior to this position, Steinhorn was an associate partner at Accenture, a management and technology consulting firm in Chicago.

Camden, N.J.-based Campbell Soup Co. has appointed Doreen A. Wright as CIO. In this new role, Wright will report to the CEO and oversee Campbell's global IT organization. Since April, she has served as a consultant to the food manufacturer. From 1999 to 2001, Wright was CIO at Nabisco Inc., prior to its merger with Kraft Foods Inc. From 1995 to 1998, Wright was senior vice president of operations and systems at Newark-N.J.-based Prudential Insurance Co.'s Prudential Investment group, where she led a 3,500-person team.

The MONY Life Insurance Co. in New York has appointed Christopher Owen as vice president of e-business for the member companies of The MONY Group Inc. Owen will report to the CIO. He will be responsible for incorporating e-business and customer relationship management strategies into business operations and establishing effective intercompany alliances within the MONY organization. Owen began his IT career at IBM and most recently served as an e-business consultant at IBM Canada.



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TECHNOLOGY

SECURITY JOURNAL

Vendors try plenty of sales tricks to get security manager Vince Tuesday to pony up for their products. They would do better to forget the gimmicks and listen to his real needs, he says. ▸ 54

HANDS ON

There's lots to like in the newest desktop LCD displays: They're brighter, sharper, less expensive and available in a wider range of sizes. Reviews editor Russell Kay surveys some of the options that are available. ▸ 58

MORE THAN MAPPING

From years of working with geospatial technologies, Nancy Tosta, vice president at Ross & Associates Environmental Consulting, has learned that they aren't about making data maps — they're about monitoring streams of business and environmental events. ▸ 60

QUICKSTUDY

A computer's BIOS is a program that's stored in nonvolatile memory and is always the first program that executes when a computer is powered up. Find out more about how this firmware works. ▸ 62



MEASURING THE SECURITY GAP

SECURITY-GAP ANALYSIS is becoming an essential tool in an IT manager's arsenal as new state and federal privacy and security regulations aimed at protecting customers' personal information contained in companies' databases are enacted. The analysis can pinpoint holes IT departments need to fix and can protect companies from expensive penalties for breach of confidentiality. And regardless of whether companies do it in-house or outsource it, IT managers need to be involved.

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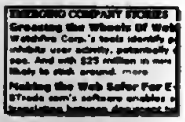
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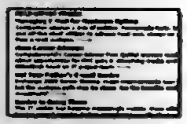
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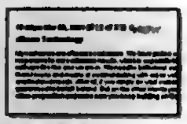
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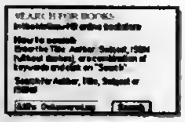
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INFORMATION SERVICES FOR IT LEADERS

Asta Launches DDOS Detection Software

BY JAIKUMAR VIJAYAN

Asta Networks Ioc. last week launched its Vantage System software, which the company claims will help users quickly detect and respond to distributed denial-of-service (DDOS) attacks.

Such attacks, which are coosidered to be one of the most serious security threats oo the Internet, basically make Web sites inaccessible to legitimate users by overloading servers or networks with useless traffic.

Asta's Vantage System makes it possible for companies to automatically identify the abnormalities in network traffic that signal such attacks, claimed Joe Devich, president and CEO of Seattle-based Asta.

The technology is composed of two primary componeots: oetwork sensors that collect samples of traffic data from key routers, and coordinators that aggregate and analyze the data from the sensors.

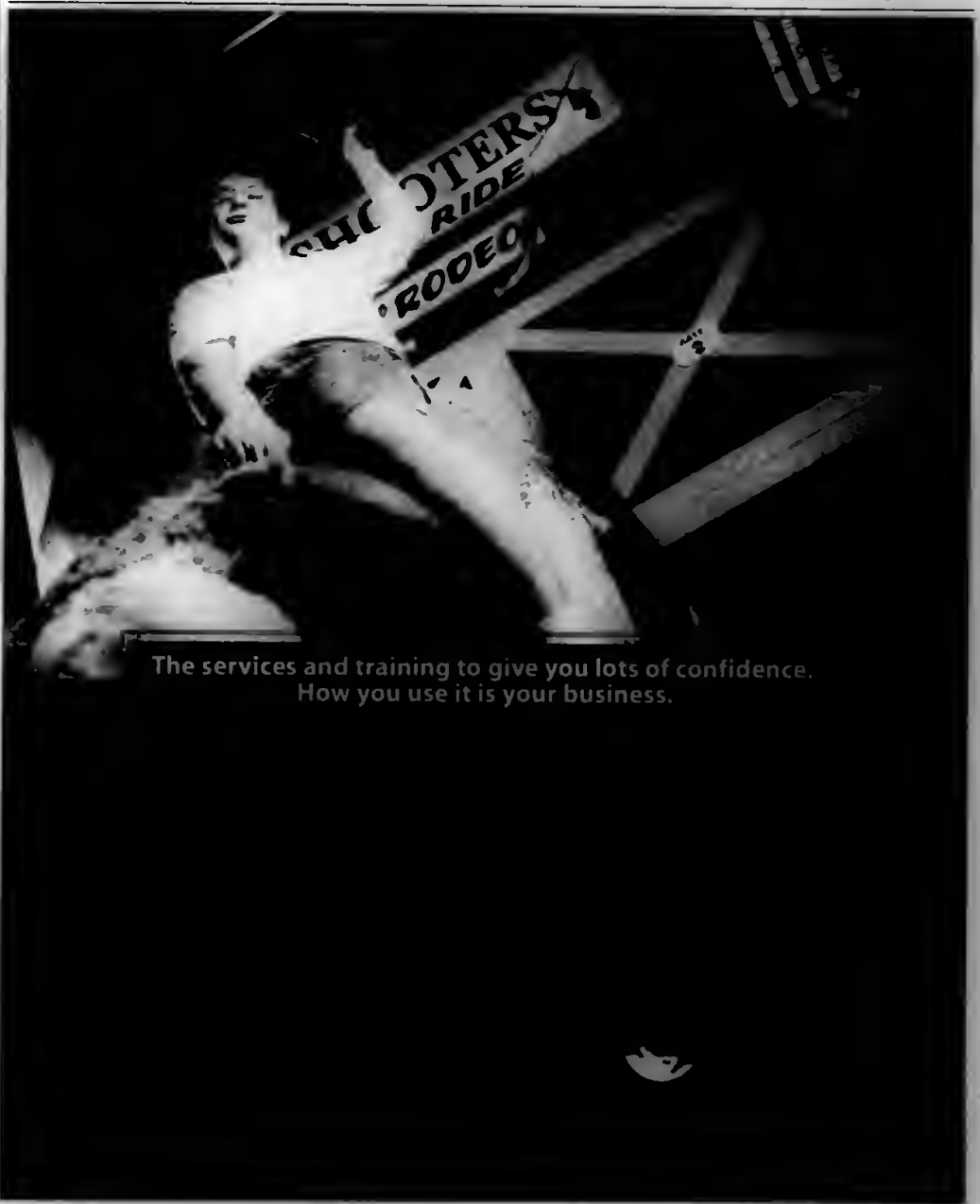
Vantage System uses proprietary signature-based and anomaly-based algorithms to detect attacks. Signature-based technology looks for traffic patterns that match those of previously publicized DDOS attacks. Anomaly-based algorithms look for traffic patterns that are different from the usual traffic on a network. Automatic alerts then notify oetwork administrators of potential attacks.

Such capabilities are crucial, said Charles Kolodgy, an analyst at IDC in Framingham, Mass. There is little that companies can do to prevent DDOS attacks from being launched against them. But with early detectioo and the right technologies, it's possible to choke off a lot of the disruptive traffic, he said.

"[Such technology] is designed to give [service providers] and users a better handle oo the volumes of data going through their networks, so that they can try and stop the bad traffic closer to the source," Kolodgy said.

But a lot depends oo the ability of such technologies to scale in high-bandwidth service provider networks, said Russ Cooper, an analyst at TruSecure Corp., a consultancy in Reston, Va. Also crucial is the ability of such technologies to really sift the bad traffic from the good traffic. For instance, it's possible to have sudden, sharp spikes in traffic for legitimate reasons. If a DDOS alert is raised each time something like this happens, users will ultimately not pay atteotion at all, Cooper warned.

Several other firms have begun offering similar capabilities, including Mazu Networks Inc. in Cambridge, Mass., Arbor Networks Inc. in Waltham, Mass., and Niksun Inc. in Monmouth Junction, N.J.



Exodus Offers Applications on Pay-as-You-Go Basis

BY JAMES COPE

Corporate users tired of adding more application servers to their Web sites as traffic increases are the target of a new service from Santa Clara, Calif.-based Exodus Communications Inc.

The service is based on a technology called Ejasent UpScale, from Ejasent Inc., a start-up in Mountain View, Calif.

According to Smita Deshpande, vice president of product marketing at Ejasent, UpScale is a network that oses a proprietary scheme to capture a complete applicatioo stack — application server, Web server, database server and data. It then replicates that stack on Ejacent's servers as what Deshpande calls an "AppShot."

UpScale takes the concept of putting network functionality closer to users — which, up to this point, mostly has been manifested in caching frequently used data and graphics files at the edges of networks — and applies it to full application processing, according to industry observer Marc Haverland, a former vice president at MapQuest Inc. in Denver.

"The idea [of applications-on-demand] looks good on paper," said Phil Gibson, vice president of e-commerce at National Semiconductor Corp. in Santa Clara, Calif. The Ejasent technology seems like a way to handle application-specific traffic during peak oetwork-demand periods without expanding existing network infrastructure, he said.

Gibson noted that National Semiconductor's Web and e-commerce systems are co-located at Exodus data centers.

When users access an applicatioo using UpScale, unique copies of an AppShot or "AppShot Instances" are brought up on a server and made available to those users through the Exodus network. AppShot Instances are torn down when they're no longer needed, freeing up the server for other applications and users. Since the number of AppShot Instances is driven by demand for a given application, the process effectively creates a distributed application-processing network.

David Tapper, an analyst at IDC in Framingham, Mass., called Ejasent's technology a significant breakthrough. "You can share multiple applications on a server, and you can serve multiple customers on the same infrastructure," Tapper said. That, he noted, increases application-processing capabilities without adding more hardware to the network.

The application-on-demand service works only with applications that run on the Solaris operating system. It's currently available through Exodus, although a spokeswoman said the company doesn't yet have customers who are using the service. She said that the cost of the service will be based on the applications used and will be billed like a utility.

Cost Comparison

Conventional	Computing-on-Demand
▸Highly available	▸Highly available
▸Redundant systems	▸Globally distributed
▸6 servers x 15% utilization = 40k CPU min./month	▸Shared 40k CPU min./month
▸24/7 support staff	▸24/7 support staff
MONTHLY COST: >$100k*	MONTHLY COST: <$30k*

*Prices include factors such as bandwidth and large storage requirements



BRIEFS

Tatung Offers Smaller UltraSPARC Servers

UltraSPARC III servers that are 25% smaller than competing units have been announced by Fremont, Calif.-based Tatung Science & Technology Inc. for tower, desktop or rack-mount use. The new small form factor COMPstation U1000T/1750 and COMPutation U1000T/2750 servers use Sun Microsystems Inc.'s UltraSPARC III processors, as well as its latest-generation 64-bit SPARC v9 architecture, and measure 7 by 17.23 by 20 in. The Tatung servers support up to two UltraSPARC III processors with an 8MB Level 2 cache and up to 8GB of memory. Prices start at $13,690 for a standard configuration with a single 750-MHz processor and 1GB memory and $18,690 for a configuration with dual 750-MHz processors and 1GB memory.

Asante Launches 12-Port Gigabit Ethernet Switch

San Jose-based Asante Technologies Inc. announced last week that the company's 12-port IntraCore 65120 Gigabit Ethernet switches are shipping, starting at less than $400 per port. The design incorporates support for real-time multimedia communications (voice, video and data) over industry-standard Ethernet networks, according to the company.

BEST IN BUSINESS INTELLIGENCE

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Message to Vendors: Drop the Mind Games

Trinkets and tricky sales techniques won't impress — how about products that work as advertised?

BY VINCE TUESDAY

I HAVE A competent security team that deals with a wide range of situations, but there's one task that sends a shiver down my team members' spines: a cold call from a security product salesperson. They pass these calls along to me as fast as they can.

As a large financial institution, my company is an ideal target for such calls. We have a big budget and a well-known name that, if associated with their products, would help security vendors sell to other financial institutions. We are also a bit of a hassle for vendors to sell to — we have a long-term security plan and rigorous evaluation criteria, so we don't generally select products based on cold calls.



SECURITY MANAGER'S JOURNAL

I hope these people will someday learn what a security manager really wants. In the meantime, here are a few tricks to beware of that salespeople have tried on my organization, and some responses security managers can try.

Challenge and Response

Don't get me wrong. I get on well with those few sales teams that bother to learn what I'm looking for and don't hassle me when they don't have the right product or service. But many use obvious tricks when a little honesty and patience would advance both our causes considerably.

I don't know who trains sales teams, but one trick that really doesn't work is neurolinguistic programming (NLP), or body-language mirroring.

Once you catch on that a salesman is using NLP, you can have a bit of fun with him. When someone on my team spots a salesman trying this trick, the spotter gives a previously agreed-upon signal, asking a specific question to let everyone know the games have begun. We try to work the salesman into the most unusual position or to get him to carry out the most ridiculous action.

It starts simply. For example, I might lean forward and then back, or hook one arm over my head. With each silly position, if the salesman copies me, I push it further. I've not yet gotten one to stand on the table, but I can hope.

Another common trick that salespeople use is to continually repeat our names: "So, Vince, are you interested in buying an intrusion detection system, Vince?" I think this is meant to make me feel friendly, and I suppose they might think the technique is working when I reply in kind with, "Well, Dave, I can see, Dave, that your product, Dave, is good, but it isn't, Dave, for us, Dave."

If they don't use cheap psychological tricks, they use blatant bribery. Like everyone else, we get free mouse pads, T-shirts and stress balls. We also collect more unusual freebies. We have those little curved mirrors that you stick to the corner of your monitor so you can subtly look over your shoulder. We like them so much that they have become a major component of our user awareness campaign, and we've put little slogans on them.

The oddest thing we have ever received has since become our team mascot, on proud display in our office. We were evaluating host-based firewalls. The technology was developed primarily for home users, so they can protect themselves from attacks while dialed in to a network. We wanted similar technology to let us divide our networks into logically distinct compartments without having to add filters at the switch or router level. So we were looking for a system that had the same technology as the home-based systems but allows centralized management and reporting.

One company we approached was Lichtenfels, Germany-based Biodata Information Technology AG. Biodata's Sphinx PC Firewall isn't suited to our needs, since it isn't aimed at multiple-machine organizations. But the company hopes to include the firewall technology in a more corporate-focused product later this year, so it sent us a copy for review.

What's this got to do with freebies? Right on the front of the box, it says in bold letters, "Now, with free squeezy key chain!" with a huge arrow pointing to the top right of the box, where a key-chain sphinx is proudly displayed.

I can't imagine what goes through a retail customer's mind when he selects a firewall product. Would you buy software for your home machine because it came with a free key chain?

But the squeezy is an ordinary key chain. When you squeeze it, bright green gunk bulges from its eyes and mouth. I don't know why, but I find it strangely compelling. If you've been given something weirder to try to persuade you to buy a product, let me know in the Security Manager's Journal forum.

An Offer You Can't Refuse

Recently, one company used a hook that I couldn't resist. I've mentioned before that we have looked at outsourcing parts of our security infrastructure where it makes sense, and one good area for outsourcing was external e-mail antivirus scanning.

We use MIMEsweeper from Dublin-based Baltimore Technologies PLC for gateway protection. As an alternative, there are products that offer an outsourced scan of all Internet e-mail before it's delivered by sending it via the outsourcing company's mail servers for checking.

U.K.-based managed service provider MessageLabs Ltd. has always stood out in this field with its comprehensive published data, including real-time mapping of the global spread of viruses. Now the company's pulled a very clever offer out of its hat.

MessageLabs' contract guarantees that users of its service won't receive viruses. If a virus slips through, the company says it will give you your money back. Any security company that puts its money where its hype is should be rewarded with plenty of business. Do any other companies want to step up to the mark and start offering the same deal?

THIS WEEK'S GLOSSARY

Neurolinguistic programming (NLP): This is a sales psychology fad that involves reaching consensus by mirroring the actions of your prospective customer. The technique is meant to convince the customer that you share the same attitude because you share the same body language.

Host-based firewalls: These systems provide the same controls as firewall gateways but reside on the actual machine to be protected, rather than on the edge of the network. They're useful for home users and companies that don't trust users within their networks.

LINKS:

www.biodata.com/us/products/pcfirewall/biodata_pcfirewall.cphtml: Biodata sells firewalls, but if you ask nicely, perhaps you can get a "squeezy key chain" as well.

www.baltimore.com: No trinkets here, but we bought Baltimore Technologies' MIMEsweeper gateway software anyway.

www.messagelabs.com/: Want a 100% guarantee against being e-mailed a virus? MessageLabs provides one. Go here to learn more.

www.messagelabs.com/viruseye/outbreak.asp?id=lovebug-04May00-h: View this link to see a graphic of how the Love Bug virus spread. It's nice to know that the U.S. is leading the world in this type of export.

MORE ONLINE For more on the Security Manager's Journal, including past journals, visit www.computerworld.com/securitymanager.

■ This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com or go to the Security Manager's Journal forum.

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Closing the Secu

A gap analysis is a critical first step toward compliance with HIPAA and other government regulations, practitioners say.

By Amy Helen Johnson

WHEN IT RECEIVED A gap-analysis report detailing what steps it needed to take to comply with the security and privacy regulations in HIPAA, eMed Technologies Corp. found that for the most part, it was in pretty good shape, says Kelly Pickard, director of strategic alliances at the radiology image-management service.

But that didn't mean the IT department was home free. After receiving the report from security consulting firm Guardent Inc. in Waltham, Mass., eMed's IT personnel found themselves beefing up security measures at the Lexington, Mass., company's network operations center, going to security training classes and upgrading the firm's main product, eMed.net, Pickard says. Some of these tasks were unexpected, but that's the whole point of a gap analysis, he says. "What you hire these folks for is to find the surprises," he says.

A gap analysis is becoming an essential tool in an IT manager's arsenal as new state and federal privacy and security regulations seek to protect personal informatioo about customers contained in companies' databases. The analysis can pinpoint holes that IT departments need to fix and can protect the company from expensive penalties for breach of confidentiality.

Today, the immediate concern is the Health Information Portability and Accountability Act (HIPAA), but consumer privacy advocates have the attention of legislators, who are passing new electronic security laws that could affect many industries. While health care organizations are facing deadlines for compliance with HIPAA, the need for gap analysis is growing in all sectors of the economy. For example, banks and other financial institutions are working on following similar rules in the Gramm-Leach-Bliley Act.

Some companies are keeping the gap-analysis task in-house, but many others are choosing to hire outside consulting firms. Io either case, practitioners say, IT must be involved at every step.

MOREONLINE

For more on privacy regulations and gap-analysis services, see our Web site www.computerworld.com/securitygap

For HealthNet Inc., a Kansas City, Mo.-based managed health care plan, handing over the gap analysis to an outside firm was the best decision, says Lori Sayre, the plan's director of HIPAA programs. The company's small IT department has only 40 to 45 people, she says, and adding a gap-analysis project to their regular workload would have been a "big burden."

Marcel Blanchet, CIO at Branford, Conn.-based The Connecticut Hospice Inc., a hospital facility for terminally ill patients, took the opposite view. His IT department conducted an internal gap analysis because he thought his group could do it well and the in-house optioo would save the nonprofit organization money, Blanchet says.

Sayre says that for a company the size of hers, which has one location and a few hundred employees, $70,000 and up is the going price for compliance with HIPAA. Remediation costs can also increase the total tab. At CareGroup Healthcare System in Boston, a gap analysis by El Segundo, Calif.-based Computer Sciences Corp. resulted in a yearlong effort to move into compliance, says CIO John Halamka. The project will cost about $1 million — a significant chunk of the IT department's $26 million budget.

Regardless of who has responsibility for the analysis, IT personnel need to be involved in the preparatioo for the audit, the cooduct of the audit and the plans for addressing aoy gaps found.

Eveo when a company outsources gap analysis, the IT department must still collect the relevant documentation on security and privacy policies and procedures, plus any engineering-level documents that outline technical security specifications. This paperwork must be turned over to the consulting firm so it can understand the company's current practices. At eMed, consultants also interviewed the engineers, says Pickard. If aoy internal systems testing involved, as was the case with eMed, an IT administrator needs to create an account that the consultants can use to log on to the network. But that's a minor level of IT involvement compared with the tasks faced by IT once the report is in.

When consultants from Novell Inc. submitted a security assessment to Capital Region Health Care Corp. in Concord, N.H., Mark Starry, the company's enterprise architecture manager, launched an internal audit of the rights and permissions granted to more than 3,000 users for access to hundreds of shared directories and approximately 400 applications. This was in direct response to the privacy portion of HIPAA, which directs companies to limit access to patients' records in certain situations.

Starry says he's given Novell the job of redesigning Capital Region's Novell Directory Services implementation. He's also putting in audit trails to back up the redesign of the company's permissions scheme, allowing him to track access to confidential information in case there's ever a problem.

rity Gap



Rather than retrofitting systems based on a gap analysis, some IT leaders are rebuilding security from the ground up for compliance.

After an analysis led by Cap Gemini Ernst & Young and in-bouse IT staff at Centura Health, Senior Vice President Elaine Callas consolidated the Englewood, Colo.-based health-care organization's operating systems. By moving to a single-vendor architecture, with servers running Windows 2000 and Windows-based PCs, Centura can use Windows distributed security to solve many of its HIPAA concerns, sbe says.

At CareGroup, paying attention to security fundamentals is also the first line of HIPAA security, says Halamka. One such priority is ensuring that the firewall is doing its job, he says. This includes closing down ports so that there aren't holes through which patient information can leave. Halamka also configured servers with digital certificates for authentication.

HIPAA is also pushing the IT department to take subtler security steps. CareGroup is going through its applications to remove unnecessary identifying information, says Halamka. For example, a user of an accounting program doesn't need to know a full diagnosis of someone's condition in order to bill him for a test, Halamka says.

The Connecticut Hospice is making physical changes in response to HIPAA, says Blanchet. The in-house gap analysis it performed uncovered places where employees or visitors could see protected information when it was displayed on a monitor. So the hospice is building higher counters at secretarial and nursing stations and putting blinders along the sides of monitors to shield the screen from passersby, he says. IT staffers have also installed screen savers on desktop systems so that they blank out and protect confidential information at the touch of a key.

IT managers say that although a gap analysis helps them clarify the weaknesses in their security efforts, it also reveals that their existing efforts are pretty strong. Capital Region hasn't had to change its privacy and security practices much because it's already doing the right things to protect patient information, says Starry. "HIPAA just gives the government a mechanism to enforce what a lot of good hospitals have been doing all along," he says.

Johnson is a Computerworld *contributing writer in Seattle.*

WEBB CHAPPELL

Gap Analysis 101

Whether you hire contractors to conduct your security gap analysis or keep the job in-house, the steps to follow are the same, say practitioners.

- Obtain a copy of the regulations with which you must comply or write a set of standards that will define your goal.
- Define the scope of the analysis. Consider conducting several analyses that focus on different parts of your operation.
- Collect all of the relevant documents that describe your current practices, including privacy policies, security procedures and hardware and software documentation.
- Take a physical inventory of systems. Auditing software can tell you what machines and software are on your network. Use automated inbound dialing to discover unauthorized modems.
- Conduct interviews to find out what procedures employees actually use.
- Examine your systems for proper implementation of security measures, paying attention to common problem areas such as configuration settings.
- Compare current security practices and tools against the standard you're using.
- Prioritize the gaps you've found, then implement remedies.

– *Amy Helen Johnson*



Flat Screens At Thin Prices

Desktop flat-panel monitors are better than ever, with lower prices and a wider choice of sizes. By Russell Kay

WITH THEIR recent rapid nose dive in price [Technology, April 23], flat-panel displays are now affordable alternatives to bulky CRT monitors for many, or maybe most, users. The wary buyer, however, can be forgiven for wondering what a user is giving up with these sub-$500 flat panels. The quick answer is nothing; these are the same monitors that were selling for $200 to $500 more just a month ago.

For the past year, I've worked with a succession of flat-panel monitors, most often 18-in. models. In no particular order, I've used displays from the following companies: NEC-Mitsubishi Electronics Display of America Inc., Philips Electronics NV, ViewSonic Corp., Nokia Corp. (its monitors are now a division of ViewSonic), Compaq Computer Corp., IBM, Samsung Electronics Co. and Sharp Electronics Corp.

Many of these displays are 18-in. panels priced at $3,000 a year ago and maybe $1,200 today. Was there a design or production breakthrough to justify such a dramatic change? Hardly. The price drop is fundamentally a marketing maneuver — inevitable, but sooner than expected and a welcome development for users.

But it was a manufacturing consideration that led to the recent introduction of 17-in. LCD monitors. Just a tad smaller than their 18-in. predecessors, they're considerably cheaper to make, with higher yields and less waste. Though 17-in. displays are now appearing at prices of about $1,000 to $1,100, they're so new, I've had the chance to try only two of these units, one from IBM and the other from Samsung.

Sharpening the Technology

The most recent LCD development comes from Sharp, which has introduced a 16-in. LCD for $849. Indeed, the Sharp unit is so new, it arrived just one day before my original deadline for this review. Sharp has long been a flat-panel supplier to others, but the new units represent the first to appear under the company's own brand.

These monitors have some very effective technology that offers increased brightness and contrast and really black blacks. Smaller than the others, the Sharp unit still operates at a native resolution of 1,280 by 1,024 pixels, like the 17- and 18-in. monitors, and its slightly smaller pixels result in an image that appears to be sharper. The Sharp is perhaps the most interesting of all of the monitors I reviewed.

Before discussing specifics, however, I need to say that there isn't a loser in this bunch. A few monitors stand out for apparent brightness, contrast and sharpness, but the rest aren't bad. I'd be happy to live with any of them.

I liked the Sharp as soon as I unpacked it. Yes, the display is smaller than the 17- and 18-in. units, but Sharp has also considerably pared down the plastic housing.

Flat-panel monitors are famous for their footprints being smaller than those of corresponding CRT monitors, but a large panel can still be pretty imposing. The Sharp is one of the thinnest units I've seen; it doesn't dominate my desktop the way bigger monitors do. The base is about the same size as the others, but Sharp has cleverly designed it to hold the relatively large power brick all LCD monitors seem to need.

Finally, the Sharp appeals to me because the control buttons work easily and well, and there's an autoconfiguration setting that takes care of most of what you need.

On the downside, I have to mention two things. First, the unit actually died after a day of operation. This appears to have been caused by a defective power brick; I've never seen anything like it. Second, when I switched resolution from the native 1,280 by 1,024 pixels to 1,024 by 768, the screeo image was letterboxed — that is, in a different proportion than before, with unused black areas on the top and bottom. This is unusual, but after a minute or two, I wasn't aware of the difference.

I was most impressed by the Philips Brilliance 180P right out of the box. It, too, seemed sharper than others.

Bright Lights

I had great hopes for the new IBM monitors, but after using the 17-in. T750 for just a few minutes, I was disappointed. It didn't seem quite as crisp as the Philips (I wasn't able to compare them side-by-side), though the resolution was equivalent and the contrast was outstanding.

To investigate this, I used DisplayMate for Windows (*www.displaymate.com*), a diagnostic program that's useful for monitor setup and testing, from DisplayMate Technologies Corp. in Amherst, N.H. After going through DisplayMate's setup program, I cut the monitor's brightness considerably and its contrast by a lesser degree.

After that adjustment, images were noticeably clearer and crisper. This demonstrates the importance of proper setup for desktop LCD panels. It's much easier to do now than it was a few years ago, and several monitors automate many of the most complex steps. Still, this was the first LCD monitor I've looked at in two years that didn't seem to be well adjusted out of the box.

What's the best flat-panel monitor? Take your pick. A few stood out from the rest for subjective image quality, but none of the others were bad. All were better than similar panels I tried a year ago.

With an unlimited budget, I'd likely opt for the $1,299 18-in. Philips. If I were trying to squeeze out every penny, I'd probably pick one of the $499-class 15-in. panels, such as the IBM T540 (which only reaches that price when bought with a system). With just a little more money, I'd try very hard to get the Sharp, a nice compromise in both size and price.

MORE ONLINE

For detailed information on these monitors and their specifications, visit our Web site.
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GIS: More Than Just A Map



WHO IS SHE?

Nancy Tosta, vice president at Ross & Associates Environmental Consulting, has worked at the U.S. Geological Survey and at the Federal Geographic Data Committee.

For more than 25 years, Nancy Tosta has directed government and private-sector efforts to use geospatial technologies in environmental and natural-resource-related projects. She has served as geographic information system (GIS) manager and deputy director at California's Teale Data Center and was special assistant to the Secretary of the Interior and staff director at the Federal Geographic Data Committee. She has also been chief of geographic data coordination at the U.S. Geological Survey. As vice president at Ross & Associates Environmental Consulting Ltd. in Seattle, her most recent project has been examining use of geospatial technologies nationwide for the Environmental Protection Agency. Computerworld *senior writer* **Sami Lais** *talked with her about the future of GIS technology.*

How will GIS change in the next five years? We're more likely to see collection of geospatial or georeferenced data at the point of transaction.

When a building permit is issued, the location of the work will be automatically collected and referenced to the characteristics of the construction. This will not be a secondary process, where you collect the data and then geocode it later. [Geocoding links the attributes of a physical place to its address.]

We won't use the data to create base maps but to monitor streams of environmental or business events. Because we'll be doing it in real time and space, we'll be monitoring reality, rather than a cartographer's interpretation of reality, which is what a paper map is.

The way we think of how we represent the data is changing.

We used to think in terms of layers of information stacked and integrated to form a map. Now we're thinking more of modeling reality and the relationships of data that are interrelated and dynamic.

The richness of the description of how different kinds of spatial and nonspatial data are related is going to continue to grow more complex. But that complexity will be as invisible to users as it is with any other kind of data.

What prevents GIS's integration into mainstream business applications? Nothing really; it's already there in many senses. However, we need to move away from the map paradigm that has been the basis of GIS for many years.

Automating maps is the primary way we've traditionally handled spatial data in our GIS, but new tools are allowing us to gather data with more precise locations. Wireless technologies, the Global Positioning System [GPS] and the ability to handle large volumes of data give us the potential to take whatever we are measuring, whether it's stream flow or building permits issued, and track that process geographically in the real world in real time.

How important will geolocation for wireless services be in introducing GIS into mainstream business? I tend to think of GIS as just one tool in a suite of technologies that make use of location information. Wireless services are going to contribute locational knowledge to many communities, and how they choose to use that information and whether they are already using GIS will vary.

The emergency response community will gain significant knowledge about locations, which will probably lead to an expansion of interest in using GIS to look at patterns and understand spatial relationships, activities GIS supports well.

The use of wireless to collect georeferenced data in real time will also expand in the environmental [for monitoring spills or water quality], transportation [for routing], service delivery [for identifying drop-off points] and other disciplines that need information that frequently changes in space and time.

How big an issue is quality of existing spatial data? Of the many quality issues with spatial data, the most common one is the accuracy of locational georeferencing. Maps represent reality at specific scales. The smaller the scale, the less accurate the locations and the fewer features that can be represented.

GPS can provide more accurate geographic referencing, while digital imagery represents a less interpreted view of reality. These tools are increasingly being used as inputs for GIS data, which will help with data accuracy.

If so much data has a spatial element and if it's so important, why hasn't GIS developed as a mainstream technology already? In some ways, GIS has gone mainstream. It's increasingly integrated in the IT community, and the public doesn't know that it's using something like GIS when it uses an Internet site to delineate a route.

In other ways, the technology has been its own worst enemy. The culture has tended to be "those in the know."

Decades ago, before GIS, many companies managed spatial data for things like determining where to drill for oil and monitoring environmental change.

When GIS software emerged, the focus shifted to encoding and reproducing maps, and I think we moved away from the broader idea of managing spatial data. Maps can be a great way to output spatial data but may not be the best input. Most things are spatially referenced — everything happens somewhere. Organizations need to consider how place matters in the conduct of their business. ◗

Bringing GIS Into Your Application

To evaluate whether and how geospatial data can help your business, Tosta offers these pointers:

- Start with your business, not the technology. Ask what analyses the business needs.
- Ask how location data ties into your business functions and their various elements.
- To determine what spatial data and software functionality are needed, look at the transactions you do and the information generated by them. Also, consider the relevance of location and whether data about location can be captured during business transactions.
- Check out GIS shows and conferences. Ask vendors how they would meet your needs. Look for geospatial data management technologies that tie into your existing systems.
- Ask whether the software supports open standards. Be cautious about proprietary systems.

– Sami Lais

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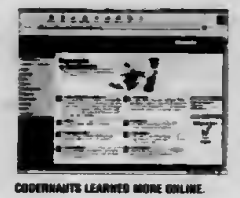
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HOT TRENDS & TECHNOLOGIES IN BRIEF

BIOS

BY TOM THOMPSON

The **basic input/output system (BIOS)** is the first program that runs on a PC each time it's turned on. When the BIOS boots up a computer, it first determines which attachments (peripherals) are in place and operational. It then loads the operating system (or key parts of it) into the computer's RAM from the hard disk or disk drive.

A basic input output system (BIOS) is a program that's stored in nonvolatile memory such as read-only memory (ROM) or flash memory, making it firmware. The BIOS (sometimes called ROM BIOS) is always the first program that executes when a computer is powered up.

Here's what happens during the boot process (see steps in diagram below):

1. Power is turned on.

2. The CPU hands control over to the BIOS.

3. The BIOS runs a program called Power-On Self Test, which determines how much memory the computer has and then confirms that critical low-level hardware is operating correctly. Any errors are indicated by sequences of audible beeps. After this, the BIOS disables all configurable devices.

4. The BIOS identifies all of the computer's peripheral devices, such as hard drives and expansion cards. It first looks for plug-and-play devices and assigns a number to each, but it doesn't enable the devices at this time.

5. The BIOS locates the primary boot or initial program load (IPL) device. This is usually a storage device such as a hard drive, floppy drive or CD-ROM that holds the operating system, but it can be a network card connected to a server. The BIOS also locates all of the system's secondary IPL devices.

6. The BIOS builds a system resource table, assigning conflict-free resources according to which devices it found and the configuration data stored in nonvolatile RAM.

7. It selects and enables the primary input (keyboard) and output (monitor) devices, so that if trouble occurs during the boot process, the BIOS can display a recovery screen and allow the user to select a stored configuration of system settings that are known to work. The BIOS captured these settings the last time the computer booted successfully, and it stores them in nonvolatile RAM.

8. It scans for non-plug-and-play devices, including the Peripheral Component Interconnect (PCI) bus, and adds data from their ROMs to its resource table.

9. The BIOS resolves device conflicts and configures the chosen boot device.

10. It enables plug-and-play devices by calling their option ROMs with appropriate parameters.

11. It starts the bootstrap loader. If, for some reason, the default IPL fails to load the operating system, the BIOS tries the next IPL device in the list.

12. The IPL device loads the operating system into memory.

13. The BIOS hands over control to the operating system, which may make other resource assignments.

The BIOS also contains a setup program with which the user can configure hardware-based settings such as computer passwords, the time and the date. Because the BIOS configures a primary input and output device during the boot process, a user can run the setup program and adjust device settings, perhaps even selecting a different IPL device, such as a second hard drive, when the computer fails to boot.

A major change in PC BIOS functions occurred in 1995 with the advent of Windows 95. The new operating system featured plug-and-play functionality, which not only simplified the job of adding expansion cards but also helped to define a consistent mechanism to let the BIOS recognize and configure the devices in a system.

Early systems assumed that a device would always require the same resources — a disk controller's interrupt number and range of I/O addresses, for example. It was believed that these would never change or that they were static in nature and thus needed to be assigned only once.

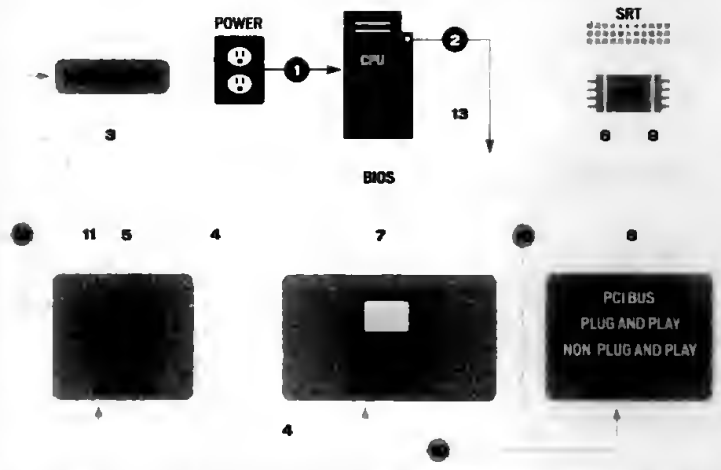
However, plug-and-play technology gives the BIOS the freedom to modify the interrupt number and I/O addresses that the disk controller uses to avoid resource conflicts.

With Universal Serial Bus and IEEE 1394 connections, devices can be hot-plugged. In other words, they can appear or disappear without warning.

This means that the BIOS must store system resource information for every device the system has ever known about, and do it in a dynamic way so that system resources, such as interrupt number, address range or device identity, can be reassigned without requiring a reboot.

The Boot Process

When a computer system is booted up, the BIOS plays a central role in identifying and assigning resources and devices, storing configuration data and settings in the system resource table (SRT) as well as in nonvolatile RAM memory (NVR).



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HOT TRENDS & TECHNOLOGIES IN BRIEF

BIOS

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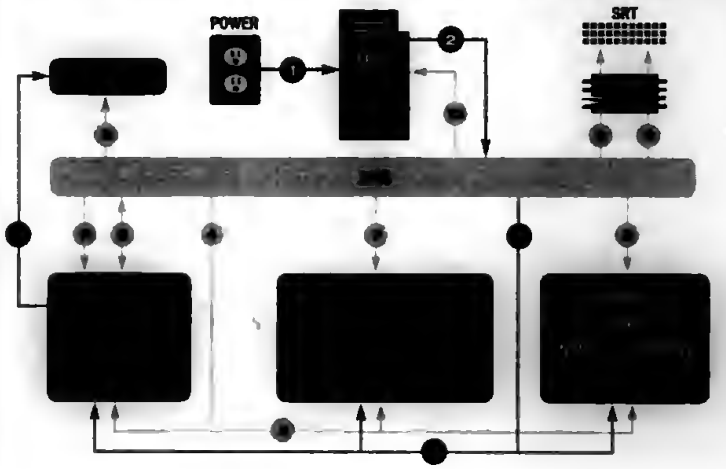
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DEFINITION

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IT'S A DIFFERENT KIND OF WORLD.
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Guaranteed Delivery Is This Start-up's Forte

Slam Dunk's service ensures delivery of e-commerce messages over the Internet

BY PIMM FOX

VENTURE Industries, an automotive equipment maker in Fraser, Mich., needed an efficient technology to upgrade communications within its Germany-based subsidiary, which supplies parts and assemblies to automakers. Al Young, global director of sales at Venture, says employees at 16 manufacturing sites worldwide relied on faxes to place orders.

"About 80% of our vendors are small operations, and the cost and complexity of setting up and maintaining a VAN [value-added network] or a VPN [virtual private network] just didn't make sense," says Young. "Using e-mail and existing EDI [electronic data interchange] was the way to go, but we needed something that could track and guarantee delivery within a secure environment, at a competitive price."

Redwood City, Calif.-based Slam Dunk Networks Inc. had what he needed. "With Slam Dunk's guaranteed system, we don't need special training or special monitoring. It just happens," Young says. He now uses Slam Dunk to streamline the ordering and order-verification process worldwide.

Getting the Message

Slam Dunk's approach involves installing servers and online data stores inside the networks of Internet service providers such as Sprint Corp.

When a sender generates an e-mail message, Slam Dunk's system passes it through a sending connector that creates a copy, then transmits the two messages using separate Internet paths through "hoops," where it creates two more copies that go into Slam Dunk's online data stores.

The hoops ensure message delivery by acting as independent routing points. The system then sends two copies of the message via a receiving connector to the recipient, delivering whichever copy arrives first.

The system then deletes the other message, verifies the received message against a copy in the online data store and destroys the archived message as well.

This multipoint verification process lets both recipient and sender know that the message sent was the one received, and it produces a detailed log of the message's transit through the network and Slam Dunk's way points. Slam Dunk guarantees delivery and backs it with a Lloyd's of London insurance policy.

Slam Dunk's worldwide implementation includes operation centers in the U.S., Europe and Asia. In addition, Slam Dunk CEO Robert Miller says message authentication and delivery come with full encryption capability.

"We encrypt the message using a [public-key infrastructure] algorithm, which is then copied using an XML package, while the customer uses VeriSign certificates to set up [a Secure Sockets Layer] connection to the hoop," says Miller. Slam Dunk's service is of particular interest because it can bridge the variety of legacy systems currently in use for data transmission, he says.

"One of the biggest problems in business networks is there are relatively few standards for business documents," says Lisa Williams, an analyst at The Yankee Group in Boston, referring to the challenge of verifying the delivery of different types of orders and invoices.

Slam Dunk keeps costs low by using the public Internet. A VAN can cost anywhere from 8 to 32 cents per kilobyte, and delivery can take minutes or hours. Slam Dunk promises delivery in seconds for as little as 5 cents per kilobyte, with no setup costs. "We use your existing system, whether it is EDI or e-mail," Miller says.

Deals to incorporate Slam Dunk's network into offerings by companies such as VeriSign Inc. in Mountain View, Calif., should give this emerging company more clout in closing deals with multinational firms. Strategic partners such as New York-based American Express Co. will also enable Slam Dunk to move into the financial service arena — a prime target for guaranteed electronic delivery services. ◗



ROBERT C. MILLER, founder and CEO of Slam Dunk, says his firm's delivery service includes authentication and encryption.

Slam Dunk Networks Inc.

COMPUTERWORLD emerging companies

100 Redwood Shores Pkwy., Suite 100
Redwood City, Calif. 94065
(650) 632-5500

Web: *www.slamdunknetworks.com*

Niche: Internet-based application-to-application guaranteed e-commerce message delivery

Company officers:
- Robert C. Miller, founder and CEO
- John Mathon, chief technology officer
- T.K. Rengarajan, vice president of research and development

Milestones:
- December 1998: Company founded
- May 2000: Raised $50 million
- August 2000: Raised an additional $20 million

Employees: 120

Burn money: $75 million from Mayfield Fund, Cisco Systems Inc., American Express Co., Oracle Corp., SAP AG, VeriSign and others

Products/pricing: Slam Dunk Networks' service subscription starts at $1,000 per month. Price varies based on the amount of data sent.

Customers: Venture Industries, Amex, VeriSign

Red flags for IT:
- Slam Dunk's network remains to be tested with large-scale, multiple users.
- Establish a well-thought-out information-transfer policy before selecting a service to connect with suppliers and customers.

[the buzz]
STATE OF THE MARKET

Transactions Guaranteed

According to Stamford, Conn.-based Gartner Inc., the market for business-to-business transactions is expected to increase from $145 billion in 1999 to $7.3 trillion by 2004. But this growth projection assumes that companies can reliably and securely conduct business electronically.

VANs and VPNs are the preferred methods in use today, but both are expensive. Offerings from Slam Dunk and other vendors let companies use the Internet for e-mail and EDI transactions.

Slam Dunk's collection of strategic partners could mean its product gets incorporated in Internet service provider networks as well as in ubiquitous software such as San Jose-based Adobe Systems Inc.'s Acrobat Reader, says Lisa Williams, an analyst at The Yankee Group in Boston.

But Slam Dunk isn't the only company working on guaranteed delivery. Here are two competitors.

United Parcel Service Inc.

Atlanta
www.ups.com

UPS's OnLine Courier service provides a type of authenticated delivery for messages with attachments.

Recipients download the intended message or attachment. But the sender can't verify that the recipient actually received the message, just whether he attempted to receive it.

PFN Inc.

Charlestown, Mass.
www.pfn.com

PFN's FirmLink Network service uses a patented distributed directory process to enable end-user administration of information exchanges.

FirmLink's agents retrieve and wrap the data, describing the content of the object and the source of the transaction. FirmLink then encrypts the data and sends it over the Internet to FirmLink servers, which store the data and match it against a directory of relationships before addressing and sending it across the Internet.

The service sends an acknowledgment when the message is received and accessed.

– Pimm Fox

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The Staff That Never Sleeps

Global IT shops are increasingly adding second and third shifts in foreign lands. The process is getting easier, but it still requires some uniquely trained managers. By Kym Gilhooly

For global companies developing business-critical applications, time to market is of the essence, particularly as they launch e-business initiatives.

An approach that has worked in the past — adding second and third shifts here at home — doesn't play well these days, with skyrocketing salaries and a lack of IT talent defining the market. Increasingly, global companies are taking advantage of the fact that they have offices in multiple time zones and are expanding their development efforts by opening development centers around the world and staffing them with people who work in shared environments with U.S. teams.

One company that's doing so is San Francisco-based DHL Worldwide Express Inc., which has opened centers in the U.K. and in Malaysia, India and other parts of Asia.

The international delivery giant is able to take advantage of time differences between these locations and California to create an extended workday. More important, it's able to put more bodies on problems at a time when IT hiring in the U.S. isn't easy.

"For us, large-scale development is not a hothouse environment, it's an everyday reality," says Colum Joyce, a global e-business strategy manager based in DHL's offices in Brussels. That means establishing development facilities around the world, as well as working with outsourcers where necessary, he says.

Recruiting people for time-sensitive application development projects is a growing challenge, says Colleen Niven, an analyst at AMR Research Inc. in Boston. "The problem with trying to launch second and third shifts here in the States is that there aren't enough skilled programmers to handle the projects in question, which are premium projects," says Niven.

Moreover, project managers and programmers balk at working late-night and early morning hours, and given the market for their services, they don't have to.

These realities, combined with the lower turnover rates and salaries in many foreign countries — the average salary for a skilled programmer in India, for example, is about $30,000, according to Niven — are driving global companies to open offshore facilities.

DHL's offshore developers tailor applications to country-specific requirements and even take lead roles in some development efforts, such as a wireless service applications project that's under way in Europe and Asia.



Joyce says the company looks at several factors when hiring in these locations, including the technical and linguistic skills of local workers, long-term business viability and knowledge transfer.

"A mastery of English is a key skill set, as it is the operating language of all cross-group communication for all development, whether it be verbal, hard copy or electronic communication," Joyce says.

Though hiring isn't easy in these global locations, Joyce says there are now advantages to hiring outside the U.S. for development work.

"PC skills are universal now, and I would say that it is actually easier to find cost-efficient skill sets that provide a good fit to our business needs outside the U.S. than in it," Joyce says. "We find less of a tendency toward flavor-of-the-month technologism outside the U.S.

"It is not so much the knowledge but the willingness and flexibility to learn that is important in hiring global IT workers," Joyce explains. "In an incredibly dynamic environment, it is the attitude, rather than gross capability, that counts the most in recruitment."

Nonetheless, Joyce acknowledges that success in such endeavors depends heavily on adopting market standards in technology infrastructure and on ensuring that there's continual communication among development teams in disparate locations. To that end, DHL puts a great deal of effort into developing what Joyce calls "hybrid managers" who are heavily immersed in both IT and business.

"This has been a process we have engaged in for over 15 years," Joyce says. "The boundaries are really transparent now, and managers and personnel are cross-comfortable with the business and its supporting infrastructure."

Gilhooly is a freelance writer in Falmouth, Maine.

CIRCUMVENTING RESTRICTIONS

Like other global companies, Fremont, Calif.-based ApplianceWare Inc. looked outside the U.S. when it couldn't find the development talent it needed here.

"Our location in Silicon Valley places us in the most competitive software environment on the planet. The lack of available talent and the exorbitant prices mean we can't afford to expand development operations here," says ApplianceWare President Stacy Kenworthy.

Initially, ApplianceWare decided to open its own facilities in Minsk, Belarus, to take advantage of a sizable pool of talented developers and a 10-hour time difference that, when complemented by the West Coast time zone, would increase the number of hours the company could work on projects.

However, says Kenworthy, the company found that government restrictions on private enterprise would make doing so prohibitive. ApplianceWare's solution was to partner with BelCal, a development firm in Minsk. BelCal has since changed its name to Sam-Solutions.

Although ApplianceWare doesn't have to hire developers in Belarus, it considers Sam-Solutions to be part of its business. Therefore, it worked with the developer to appoint a manager to oversee work and handle translation issues between Fremont and Belarus. The company also frequently sends an IT manager who works in Denmark to Minsk to ensure that processes and delivery are on track.

There are cost advantages to doing development in offshore locations, but they shouldn't be a primary driver, says Kenworthy. And those savings can be offset by additional travel and communication costs, he says.

"You need to make substantial investments in communications," he says. "And there's no getting away from face-to-face contact, so there's airfare, investments in process creation, investments in learning curve and other front-end work. You're basically changing your organizational structure."

– Kym Gilhooly

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SOFTWARE ENGINEER to design, develop, implement, test and maintain internet/intranet web-based application software in a client server environment using C, C++, Visual Basic, Oracle, Java, JavaServlets, JSP, XML, and HTML under UNIX, SUN Solaris, and Windows 95/98/NT operating systems. Require M S degree in Computer Science, an Engineering discipline or a closely related field with two years of experience in the job offered or as a Programmer/Analyst. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to Murli N. Reddy, President, Charter Global Services, Inc., 5445 Triangle Parkway, Suite 190, Norcross, GA 30092. Attn. Job VN.

Software Developer: For proprietary trading firm, resp for design & develop of customized trading applications. This includes researching, designing & developing computer software systems in conjunction with advanced trading systems & market data into systems, analyzing software req's to determine feasibility of design for trading desks & option market floors, developing software testing procedures, consulting w/ various depts. concerning maintenance of software systems, & coordinating installation. Master's degree in Computer Science or related field in lieu of Master's degree, Bachelor's degree in Computer Science or related field & 5 yrs exp as Software Developer. 2 yrs exp. in job offered or in software design Exp. must include programming in C++ in Unix environment & real-time systems designs. Exp. can be gained while pursuing degree 40 hrs/wk. Send resume to Susquehanna Int. Group, LLP Attn AB 401 City Line Ave Ste 220, Bala Cynwyd, PA 19004

Multiple openings for permanent IT technical positions for expanding full-service national tech solutions staffing and consulting firm. Positions include Network Analysts, Software Engineers, Systems Analysts, Technical Consultants and Programmer Analysts. Possible locations include Peabody and Beverly, MA, central Pennsylvania, Jupiter FL & suburban New York City Particular tools required include one or more of JAVA, C++, Perl UNIX CORBA B.S. in Computer Science, Engineering, Math or related area Some positions require prior experience Will accept combination of education, training and experience in lieu of degree or foreign degree for some positions. Competitive salary and benefits. EOE. Send 2 copies of resume with copy of this ad to Amy Johnson, Dr HR, Oxford Global Resources, Inc., 4 Centennial Drive Peabody MA 01960

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UNITED NATIONS

United Nations Joint Staff Pension Fund Investment Management Service Systems Analyst, P-4, New York

The Investment Management Service of the United Nations Joint Staff Pension Fund is seeking to recruit a Systems Analyst for the Investment Management Service. The incumbent is responsible for the design, implementation and maintenance of Windows NT & UNIX LAN, designed for investment and financial services. In addition, newer services are being added to the System that includes Internet, Intranet, and Security and Access Systems issues. The incumbent would prepare technical and user documentation for IMS systems and interdependent applications, as well as planning and co-ordinating training materials and conducting training courses for IMS Staff Members. The incumbent will be responsible for Technical Support and Operations of Market Data Services running on Windows NT, Microsoft SQL Servers running IBM DB2 Engines, UNIX, Bloomberg-on-the-PC Streaming Market Data, SQL based DataStream, and additional Market Data Services that include DTC, Mellon EWB, & newer technologies as they affect the IMS. Knowledge of SWIFT & FIX would be useful. The incumbent will also assist the Senior Systems Analyst in the management of common services and planning including technical patches and upgrades, training of IMS Operations and Investment staff.

The ideal candidate would have an Advanced degree in a technology-related field such as Information management, computer science, mathematics, physics, statistics or the relevant disciplines. MBA w/major in Finance is an asset. A minimum of 8 years of experience in the field is required.

Fluency in English with a working knowledge of other UN language is desirable

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Deadline for applications: 11August 2001

Detailed curriculum vitae including date of birth and nationality should be sent to:
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Fax No: 212-963-3134
E-mail Address: Staffing@un.org
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COMPUTER/IT
Quality Assurance Engineer Requires Bachelor's degree in Computer science, Information Systems or Computer Engineering. Must have completed coursework covering relational databases. Must be fluent in oral and written Japanese at a business level. Utilizing relational databases, design and develop computer test plans for information systems and software. Execute testware in both English and Japanese testing environments to ensure that company's customized software systems and products are delivered to clients error free. Review status of testing of software systems and products and report to management regarding same. Prepare written report on specific differences in product performance and functionality in both English and Japanese language environments. Manage the testing environment including databases and client and server machines. Coordinate and provide technical direction to Japanese-speaking technical personnel supporting quality assurance testing efforts. Salary range $39,069.70 to $43,183.30/yr dep on edu & exp. Apply with resume to Debbie Berk, Synavant Inc., 3445 Peachtree Road, NE Suite 1400, Atlanta, GA 30326.

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The best of information technology firms know they must provide the best in benefits and compensation. It's the other, less-tangible factors that cause a company to rise above the rest – from the colleagues with whom they'll work to the types of projects they'll undertake to the reputation of the company itself.

Carole Poorman, head of IT Management and Planning Services for **The Vanguard Group** of Valley Forge, PA, says it is the other things that elevate a company to an "A" grade. "We've found that for **Vanguard** it is fostering a positive work environment where people like to come to work, where you find respect as part of the way you work and where IT and the business units work in partnership for the greater good of the company." Unlike many companies, **Vanguard's** leaders also talk about the value of loyalty – crewmembers' (**Vanguard's** term for its employees) loyalty to the company and the company's loyalty to its crewmembers.

"A great example is that in this environment of an economic slowdown and downturn in the financial markets, there have been layoffs right and left among financial services companies and in technology organizations – not at **Vanguard.** That is loyalty demonstrated," says Poorman. The company is listed among *Fortune* Magazine's "Top100 Companies to Work for in America." Recently, **Vanguard** placed second overall in the "Top 100 Innovators" list by *InformationWeek* Magazine.

For potential employees at **Microsoft**, the other factors include providing IT services for the company known as the "brass ring" among technology giants. Valerie Berberoglu, recruiting director for **Microsoft** in Redmond, WA, says one of the first things she hears from satisfied employees is that "they have the opportunity to work with really smart people and with leading-edge technology." Berberoglu adds, "IT is our business, so we understand the importance of the IT organization to the overall success of **Microsoft.** IT is a core competency for us."

Both companies have turnover rates below industry averages and continuously measure employee satisfaction. Anecdotal evidence is also high as **Vanguard's** business-side crewmembers often seek opportunities in IT, and **Microsoft** has a 90 percent acceptance rate on its offers.

To maintain the edge, **Vanguard** has developed entry points for people to transfer into the almost 3,000-person IT organization. **Vanguard** also conducts a career review for each crewmember and holds town hall meetings to discuss the company's strategy and where future opportunities will exist. **Microsoft** offers its IT organization the latest in technology, allowing employees to beta test new products on the corporate network. "This allows IT employees to make a direct impact on what our products will be for other enterprise IT departments," says Berberoglu.

Vanguard plans to hire between 300 to 400 new IT employees this year. Positions are available in development for web applications, as well as client/server and mainframe systems. "**Vanguard** offers the full gamut of IT projects," says Poorman. "For example, we're currently developing a new web site for our Flagship and Voyager shareholders, as well as implementing online changes associated with pension reform and the new tax package. Additionally, **Vanguard** is committed to making improvements to better serve our individual and institutional clients. A great example of this is the collaborative browsing that we introduced last year. This technology allows clients and **Vanguard's** financial associates to view the same Vanguard.com screen simultaneously."

Microsoft also will continue to grow the number of jobs, as it has every year for its 25-year history. "We have openings for systems and network engineers, application developers, systems analysts and testers. The projects are exciting as we continue to develop and support the infrastructure for a worldwide technology company of more than 43,000 employees."

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For more job opportunities, turn to the pages of ITcareers.

- **If you'd like to take part in an upcoming ITcareers feature, contact Janis Crowley, 650.312.0607 or janis_crowley@itcareers.net.**
- **Produced by Carole R. Hedden**
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Programmer/Analyst Intermediate

Perform research and fact finding under the supervision of the Team Leader to develop or modify computer related information systems. Develop application systems development implementation and maintenance plans in conjunction with overall departmental responsibilities. Conduct feasibility studies to evaluate proposed system development and expansion plans. Conduct special systems analysis and programming projects as requested and approved. Prepare detailed specifications from which programs will be written Design code, debug, document and maintain those programs. Bachelor's degree in Computer Science or related field. Requires knowledge of programming in COBOL in an AS/400 hardware environment. Salary position with base pay of $33 500 working 40 Hrs/wk. Must have proof of legal authority to work in the United States. Send your resume to Iowa Workforce Center, 902 W Kimberly Rd., Ste 51, Davenport, IA 52806-5783. Please refer to Job Order IA 1101221 Employer paid advertisement.

Systems Engineer 40 hrs/wk. 8:30am - 5:00pm $65,000/yr - 1 position Central IL; $60,000 - 2 positions, Metro Chicago. Provide service and support of LAN, WAN. LAN/WAN systems. Work with Novell and Microsoft LAN products, WAN technology and protocols (TCP/IP, ISDN, ATM) and Internet connectivity. Work with computing, telecommunications systems, and desktop computing environments (Win 3.X, Win 95/98/NT, electronic messaging, network management systems, UNIX, HTML, mini-computing/mainframe computing systems) Required: Bachelor's degree in Comp Sci/Comp Engineering/Engineering plus 1 yr exp in job offered or as Software Consultant, Network Integrator/Engineer, Network Specialist or Systems Engineer. Experience must include at least 6 months of providing service and support of LAN, WAN, LAN/WAN systems or providing installation/support of NT servers. Applicants must show proof of legal authority to work in the U.S. Take this ad to any Illinois Job Service Local Office Ref #34403 (Central IL) Ref #34625 (Metro Chicago). An employer paid ad.

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Computer Pro Softnet Corporation has multiple openings at its Woodland Hills office for the following positions: Software Engineers Programmer Analysts Business Managers Mail resumes to Pro Softnet Corp. 21300 Victory Blvd. #1230 Woodland Hills, CA 91367 Attn: R Kulkarni Code: P101

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NT Administrator - Large bank. Resp. for installing service packs and patches on NT Servers and new printers on print servers for spooling of print jobs. Monitor user permissions to shared folders. Create and modify NT Exchange Novell GroupWise accounts. Min reqs: end BA Comp Science or rel disc & 2 yrs exp in the post offd or as a Systems Analyst Network Admin or Programmer. The 2 yrs reqd exp must have incl wk w/ Windows NT network & server design, WINS, DHCP, TCP/IP domain design & back-up. Must be MCSE 40hrs/wk, $58K - $66,700. Send resume & cvr ltr to Kelly Turner, 1525 West W.T. Harris Blvd, NC 0775, Charlotte, NC 28288-0775.

PROGRAMMER ANALYST

NE OH Ins Co seeks Programmer Analyst to develop, test, document computer programs. Bachelor's degree min. 2 yrs exp in RDBMS/SQL. Resume to Marketing Support Group, 625 Alpha Drive, Highland Hts, OH 44143. No calls.

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Software Engineer-Develop software systems, focusing on web-based applications involving integration with legacy systems on IBM mainframe. Duties include creating internet site, writing EJB objects in Java residing in Enterprise Application Server, writing JSP code to access EJB objects, and studying feasibility of migration. Use JSP, Sybase products, HTML, Java, JavaScript, ASP, COM/DCOM, MVS, DB2, SQL server, etc. Degree and exp. req'd. Send resume to President, E Web Technologies, Inc., 15241 Calle Lorrita, Chino Hills, CA 91709.

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Microsoft Licensing Irks Users

Options don't fit some upgrade habits

BY LEE COPELAND OLAOWIN
ATLANTA

MIGRATING desktops and servers to new versions of software isn't easy. That fact has caused many companies to take a selective approach to software upgrades, skipping some product releases but installing others that offer needed new features.

But users at Microsoft Corp.'s TechEd conference here last week said the vendor's new licensing and upgrade plan makes them pay for the full menu, when they would prefer to order a la carte.

"Before, even if a new version came out, you could skip it and go to the next release," said Pete Svendsen, a technical specialist at a health care provider in Rochester, Minn., that's currently migrating its users from Windows NT 4.0 to Windows 2000. "Now you will have to pay regardless, and we're kind of leery about that."

Losing the option to forgo certain upgrades is the biggest gripe users at the show had about the subscription model Microsoft announced last month that will let customers with as few as 250 PCs rent its software for two- and three-year periods. The subscription model is one of four licensing options that will replace current programs starting Oct. 1. [Page One, May 14; News, May 21].

Phill Landefeld, vice president of worldwide licensing and pricing at Microsoft, said the new licensing model offers customers more choices, such as the option to lease software and a simpler way of tracking volume licenses. He said he expects that 50% of customers will pay the same as they do now and that 30% will see cost savings. The other 20% of customers will pay more because they upgrade less often than average, Landefeld said.

For example, under the Enterprise Agreement plan, a customer would receive all upgrades during the three-year minimum contract period. Yet to qualify, a user must license Windows 2000 and Office 2000 or the newly released Office XP by the Oct. 1 deadline.

Landefeld said Microsoft customers will need to have current "license rights, but that doesn't mean they have to be using the product."

But Girard Hunt, design architect at Cigna Corp. in Philadelphia, said, "We're a conservative organization. We look at a product for three to five years before we're ready to install it."

Continued from page 1

.Net Migration

six to nine months after it ships," said Mark Driver, an analyst at Gartner Inc. in Stamford, Conn. "Microsoft is notorious for its 1.0 products. We urge caution."

As expected, Microsoft Chairman Bill Gates announced the availability of the Visual Studio.Net Beta 2, and he unexpectedly unveiled Windows .Net server. The new server, code-named Whistler, will include the .Net framework. Windows .Net will become backwards-compatible to earlier versions of Windows, officials said, and the .Net framework for Windows 2000 will also be available as a separate middleware layer.

"They're showing what the products can do, but they're not really showing how to do it," said Adam Flader, an enterprise information systems developer at Lockheed Martin Corp. in Bethesda, Md. But Flader added that there's still time for Microsoft to make its case to the aerospace giant, which is in the midst of a six-month migration to Windows 2000 and Active Directory. "The main thing is getting through the Active Directory headache, then we'll look at .Net," he said.

Microsoft showcased eSkye Solutions Inc., a start-up in Indianapolis that operates a service network for the beverage industry that's one of the few end-user corporations that has migrated to the .Net platform.

"The migration was painless, compared to putting a man on the moon," said Smoke Wallin, CEO of eSkye. Wallin said the migration of the company's main order-tracking from Visual Basic to the C# development language took eight weeks. But he said the transition was worth the effort because the .Net features offer better return processing and business logic functionality.

Gates' keynote speech included a preview of a Web service developed for Scandinavian Airlines System (SAS) using Microsoft's .Net platform and C#. With Microsoft technologies, the Stockholm-based airline built a Web service that allows passengers to check and rebook flights from a PC, handheld device or cell phone.

Jonas Berggren, manager of IT architecture at SAS, said his firm would develop a migration strategy with Microsoft.

"Migration is not something we do because we like it, but because it gives us a better opportunity to provide services to our customers," he said.

Continued from page 1

Network

Marty Boos, vice president of information systems at e-commerce outsourcer Digital River in Eden Prairie, Minn., said his company monitors and measures several sites with existing Keynote services. "We've already been wrapping our SLAs around some of the Keynote metrics," Boos said, adding that he thinks the new SLA service "is a good thing" for corporate users who want to make sure outsourcers are meeting their commitments.

Neal Goldman, an analyst at The Yankee Group in Boston, said Keynote is the only company he's aware of that's offering a way for enterprise users to compare SLAs and measure compliance. It's likely that Keynote, the big brand in Web site performance measurement, is seeking to differentiate itself from measurement company Mercury Interactive Corp. in Sunnyvale, Calif., which "is and will be coming on strong," Goldman said.

Keynote is providing an apples-to-apples model in that users and their service providers have the same metrics for creating and measuring SLAs, said Bill Gassman, a senior research analyst at Gartner Inc. in Cambridge, Mass. That's a good start, Gassman said, but users still need to do load testing and also find out what kind of performance their customers really need and want. "Some customers may not care about speed the way we think they do," he said.

Mike Baglietto, product marketing manager at San Mateo, Calif.-based Keynote, said that rather than remotely creating a measurement report on behalf of a corporation, SLA Perspective reports network performance in real time through a console at the user premises.

Threshold-based alarms notify users when the network is underperforming with respect to the SLA, said Baglietto.

Companies can also use the product to performance-test SLAs from different providers before signing on, he said.

Chris Richter, a spokesman for Santa Clara, Calif.-based Web host Exodus Communications Inc., said his company wraps services offered through its partners into one SLA for which it is responsible.

But not all service providers do that, said Baglietto, noting that unless there's a third-party measurement system, it's sometimes difficult to pinpoint the culprit when there's a performance problem. He said enterprise users need the ability to "look through the network" to determine where the problem is and which entity is likely causing it.

Mercury marketing manager Diane Hagglund said her company's technology differs from Keynote's in that it stresses measurement of transaction times rather than total network performance.

Traditionally, customers like National Semiconductor Corp. (NSC) in Santa Clara have subscribed to Keynote's Web site reports to keep tabs on network speed and server availability. That "gives us an effective Internet weather report," said Phil Gibson, vice president of Web business at NSC.

The company uses Exodus for Web and e-commerce hosting. According to Gibson, the Keynote reports complement performance metrics Exodus provides through its proprietary network performance measurement system.

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FRANK HAYES/FRANKLY SPEAKING

States: No Free Ride

SO MUCH FOR MICROSOFT'S FREE RIDE. Last Tuesday, the Justice Department said it will try to settle its multibillion-dollar lawsuit against the tobacco industry. The same day, Microsoft President Steve Ballmer spent some face time with Vice President Dick Cheney. A logical assumption: Next to be spiked would be the antitrust suit against Microsoft. That assumption lasted, oh, about a day. Then reports emerged that the state attorneys general who originally spearheaded the Microsoft lawsuit not only won't roll over and play dead, but also are considering *new* antitrust charges against Microsoft.

This one *really* ain't over till it's over, folks.

Connecticut Attorney General Dick Blumenthal and Iowa AG Tom Miller say they're not planning another antitrust suit just yet — but they have "serious concerns" about bundling and features in Windows XP, according to a press release they issued at the annual summer meeting of state AGs.

Which is another way of saying they've noticed — who hasn't? — that ever since noises favorable to Microsoft started coming from the federal appeals court that's currently reviewing the case, Microsoft has been its old aggressive self again.

Microsoft pays resellers to identify customers who buy PCs without a Microsoft operating system. Microsoft hires lawyers to harass customers whose PC software it wants to audit. Microsoft adjusts its licensing terms to force upgrades. Microsoft pushes America Online off the Windows desktop because AOL won't let Microsoft link to AOL's Instant Messenger.

Signs of monopolistic behavior? Maybe. But there's no doubt Microsoft is no longer exhibiting the good behavior it displayed in the months after the verdict came down in the antitrust case last year. The bully is back.

And now, it appears, so are the states.

Remember, it was the states that pushed hardest for this antitrust lawsuit, after years of foot-dragging by the Federal Trade Commission and the Justice Department. The state AGs beat Big Tobacco, then set their sights on Microsoft. It's been their baby from the beginning.

And they're not letting it dry up and blow away. No matter how chummy Microsoft executives get with the White House. No matter how likely a complete or partial reversal in the appeals court appears. No matter whether Microsoft is broken up or merely gets a slap on the wrist.

Why? Part of it may just be some local boys feeling their oats. Microsoft supporters are dismissing Blumenthal's and Miller's comments as political posturing. You don't usually get national press attention when you're the top lawyer for Connecticut or Iowa.

But just as likely, the state AGs like the results of their efforts. During and just after Microsoft's trial, the IT business got a lot more competitive. Vendors and users who never dared to criticize Microsoft before for fear of reprisal lost that fear. And Microsoft, the IT business's 800-pound gorilla, had to tread more carefully.

Now the states have served notice to Microsoft that the company won't get a free ride. Whether or not U.S. Attorney General John Ashcroft wants to settle the suit, there are attorneys general from 19 states who will keep the pressure on.



FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

And corporate IT? We get the best of both worlds. It looks unlikely now that Microsoft will be split up or severely crippled by whatever decision eventually emerges. That means the flow of products will continue.

And with a new round of legal pressure from the states, Microsoft just might be forced to return to something like its postverdict good behavior.

That means no free ride for Microsoft — but a much smoother ride for the rest of us.

SHARK TANK

NETWORK ADMIN pilot fish calls big network switch vendor about a management software problem. "Are you using one of our servers?" vendor tech asks. "No," fish answers. "Well, there's your problem," tech says. "You know your company doesn't *make* servers?" fish asks. Pause. "I realize that," tech says.

BOSS MARVELS at his new secure ID card's sophistication. It no longer uses just numeric access codes. "It even generates alpha characters, too," he raves to IT pilot fish. "That's not an E, it's a 3," fish points out. "You're holding it upside down."

USER PILOT FISH scans in a document but can't get it to print. Tech support: "Was the source a WordPerfect document? Our scanner isn't set up for WordPerfect." Fish: "I can't tell, and neither can the scanner." Tech: "Oh. I knew that."

BUT NO PASSWORD Doing routine maintenance on a manager's PC, IT pilot fish asks for the manager's password. "I don't have one," manager insists. "But how do you get into the system without a password?" fish asks. "I type this instead," manager says. And he shows the fish a slip of paper – containing his wife's name.

ON HIS WAY to a remote office, user takes his laptop. For convenience, he checks the laptop as baggage at the airport. At his destination: no laptop. "It appears to have been stolen and is never seen again," reports co-worker pilot fish. "And the user in question is our *risk* manager."

It'll be safe with me: **sharky@computerworld.com**. You get a sharp Shark shirt if your true tale of IT life sees print – or if it shows up in the daily feed at *computerworld.com/sharky*.

The 5th Wave



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"Their fatal mistake was getting involved with MSN.com's home page building option. It's so easy, it's irresistible. They included a photo of them holding the stolen money next to the get away car, a list of their favorite aliases, banks they'd like to rob again..."

Windows 2000 ADVANTAGE

The Web Magazine for Leaders Implementing Windows 2000 and Windows NT with Compaq Services and Solutions

Online this week:

POINT OF VIEW

Facilitating implementations

For customers upgrading to Windows 2000 Server or Advanced Server, Microsoft and Compaq are working together.
www.windows2000advantage.com/pov/06-11-0_advanced_server.asp

TECH EDGE

The alleged Active Directory security flaw

The security flaw only occurs when documented procedures are not followed.
www.windows2000advantage.com/tech_edge/04-16-01_alleged_flaw.asp

Q & A

Chris Koontz shares his experience

Chris Koontz is E-business Practice manager, Parks & Company, a consulting firm.
www.windows2000advantage.com/qa/04-23-01_koontz.asp

COLUMNS

With .NET every application can function as a Web service

The Common Language Runtime feature of .NET lets you create Web services in many languages.
www.windows2000advantage.com/columns/05-21-01_net.asp

CASE STUDIES

BT Ignite Auction Services

Fueled by Microsoft Windows 2000 and Compaq ProLiant servers, BT Ignite Auction Services, easily builds online auctions.
www.windows2000advantage.com/case_studies/06-04-01_auction.asp

FEATURES >

Deploy Windows XP now or wait? These are issues for small and midsize organizations to weigh

With the next generation of Windows 2000 client and server versions on the horizon, customers are trying to understand when to buy now, and when to wait.

For the full story, visit:
www.windows2000advantage.com/features/06-18-01_deploy.asp

Q&A >

Leonard DiCostanzo blends business and technology solutions for small and medium business clients

Leonard DiCostanzo is president and founder of Turnkey Computer Systems. During a recent interview with Windows 2000 Advantage executive editor Bruce Hoard, he discussed topics that are essential to the success of small and medium size firms.

For the full story, visit:
www.windows2000advantage.com/qa/06-11-01_dicostanzo.asp

MOMENTUM SERIES >

Study says Compaq increases leading industry-standard server customer satisfaction rating for second consecutive quarter; Dell fades

According to a new study from Technology Business Research, Compaq has increased its industry-standard server customer satisfaction ratings for the second successive quarter.

For the full story, visit:
www.windows2000advantage.com/news/05-28-01_industry_servers.asp

MOMENTUM SERIES>

Windows XP capabilities dovetail with small, medium business needs

Microsoft's Windows XP Professional is coming and it promises to bring a new level of reliability to the desktops of small and midsize organizations by delivering the kind of system stability previously found only with Windows 2000.

Windows XP is the new desktop operating system built on the Windows 2000 code base. The XP Pro version is intended for business users. An XP Home version is optimized for home users. Over time, Microsoft plans to transition all its customers to Windows XP on the desktop.

The new operating system represents a marriage of the industrial strength capabilities of Windows 2000 with the richness and ease of use of Windows 9.x and Windows Me. Microsoft says Windows XP represents a convergence of Windows operating systems because it integrates the strengths of Windows 2000 – standards-based security, manageability and reliability – with the best features of Windows 98 and Windows Me – plug and play, easy-to-use interface and innovative support services.

The big winners with the release of Windows XP Pro will be small and midsize businesses. These businesses generally lack the technical resources and IT skills required to effectively support sophisticated, leading edge technology.

For the full story, visit:
www.windows2000advantage.com/features/06-18-01_xp.asp

QUOTE OF THE WEEK >

"Small and medium enterprise firms really need to see the value of technology and make sure they educate their people enough to use the technology tools on hand."

— Leonard DiCostanzo
president
Turnkey Computer Systems

What is Windows 2000 Advantage?

The mission of Windows 2000 Advantage is to become your primary source of timely, useful information for planning and implementing Microsoft Windows 2000 on Compaq solutions and services.

Windows 2000 Advantage is a Web-[illegible] because that lets us bring you, the IT leader, great stories that apply to your day-to-day work. We'll keep you up to date with a weekly e-mail alert so you don't miss a thing.

Windows 2000 Advantage is underwritten by Microsoft and Compaq. Its editors address the issues that [illegible] keeping their companies on top of the latest and best solutions Microsoft and Compaq have to offer. Toward that goal, we offer a wide range of stories including case studies, columns and news to provide you with information you can't find anywhere else.

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